DOCUMENT RESUME

ED 082 013 CE 000 287

TITLE	Small Arms Marksmanship Manual, NAVPERS 93863.
INSTITUTION	Bureau of Naval Personnel, Washington, D.C.
PUB DATE	71
NOTE	137p.
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	*Manuals; *Marksmanship; Military Science; *Military Training

ABSTRACT

The Navy's small arms marksmanship training program is designed to achieve proficiency for Navy personnel in handling the rifle, pistol andshotgun. The minimum objective of this program is to qualify Navy personnel as "Marksman," and ensure that personnel who are issued small arms for security, recreation, or competitions are fully qualified in their use. Chapters in this manual cover small arms ranges, basic rifle marksmanship, known-distance rifle range firing, basic pistol and revolver marksmanship, combat pistol training, care and cleaning of weapons, qualification courses, U.S. Navy small arms marksmanship program, competition-in-arms, match-conditioned weapons and ammunition, marksmanship trophies and awards and NROTC training and competition-in-arms. A 27-page marksmanship dictionary concludes the volume. (MS)

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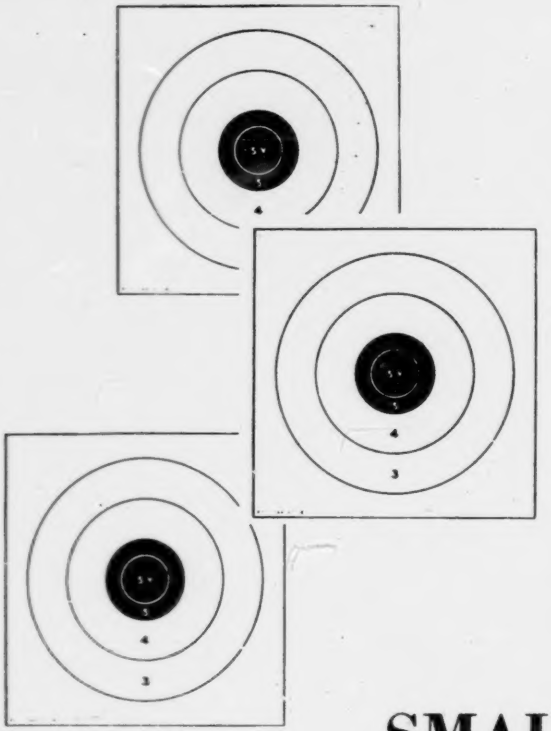

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SMALL ARMS
MARKSMANSHIP
MANUAL

CE 000 287

BUREAU OF NAVAL PERSONNEL **NAVPERS 93863**

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SMALL ARMS SAFETY

1. Treat every gun as if it were loaded. Never take anyone's word that the gun is empty. Check for yourself and keep your finger off the trigger. If you don't know how to open a gun to check its chamber, don't guess. Leave it alone!

2. Always point the gun muzzle in a safe direction. Never allow a gun muzzle to point at anyone—or yourself. Remember that bullets will penetrate walls, floors, and windows, and will also ricochet from flat hard surfaces. Pointing the muzzle in a safe direction depends on where you are (indoors, afield, on the range, etc.).

3. Be sure of your target. Identify your target with certainty before you touch the trigger. Determine where your bullet will go if it passes under, over, or through the target. You are responsible for starting the bullet: Make certain you know where it will come to rest.

Hunting is of primary interest to many Navymen. Others use a rifle, pistol or shotgun for competitions. The Navyman with a gun in his hand has a full-time job. He cannot "guess," he must know!

He must know:

- How the pistol, rifle or shotgun is loaded and unloaded.
- Whether the pistol, rifle or shotgun is loaded or unloaded.
- Where the pistol, rifle or shotgun is pointing.
- Where his target is.
- What his target is.
- Where the bullet will go.
- Where the bullet will stop.

PREFACE

The Navy's small arms marksmanship training program is designed to achieve a realistic degree of proficiency for Navy personnel in handling the rifle, pistol and shotgun. The minimum objective of this program is to qualify Navy personnel as "Marksman," and ensure that personnel who are issued small arms for security, recreation, or competitions are fully qualified in their use. In addition, certain categories of personnel who are normally required to be armed in the performance of their duties should qualify at the "Sharpshooter" level. All Navymen have defense responsibilities against overt and covert enemy action. To discharge these responsibilities the fundamental military concept of competency with firearms is a requirement. The security of ships and stations and the survival of their crews may be dependent upon individual proficiency with assigned firearms.

1971

RECORD OF CHANGES SHEET

Identification of change	Date of change	Date entered	Signature of person entering change

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PART 1

BASIC MARKSMANSHIP TRAINING AND RANGE OPERATION

CHAPTER 1

GENERAL

INTRODUCTION TO THE SMALL ARMS MARKSMANSHIP PROGRAM IN THE NAVY

1101. Purpose

The purpose of a Small Arms Marksmanship Program in the Navy is twofold: First: To prepare Navymen for the most effective use of all the service small arms. Second: To assist commands in promoting hunter safety and extensive intramural competitions for training and recreation. See figure 1-1.

Figure 1-1.—Training to hit the target.

1102. Scope of Training

The term "small arms marksmanship" includes all the qualification exercises and competitions fired with small arms and listed herein. The manual covers only individual instruction and firing at bull's-eye and silhouette targets and at known ranges. This limitation in scope is imposed by the limited time available for small arms marksmanship training. It is considered that time and facilities available will ordinarily not permit individual instruction at ranges greater than 300 yards. Advantage should, however, be taken of opportunities to gain greater experience by firing at the longer ranges, provided that the firing can be done under proper supervision and without exceeding the ammunition allowance.

1103. Applicability

All ships and stations will conduct a small arms marksmanship training program. Under ordinary conditions there will be insufficient opportunity to give a thorough course of small arms training to the entire complement of a ship. Since training which stops short of thoroughness is very largely wasted, the number required to be trained should be restricted to the number that can be trained thoroughly. Modification of this principle should be accepted as demanded by contingencies of the Navy and available ammunition allowances. In general all officers should be familiar with the service pistol and/or revolver. All enlisted men whose duties as security watch standers require them to be armed, or who are normally armed in the course of their regular assigned duties should fire an annual qualification course with the weapon with which armed.

1104. Methods to be Used

The methods prescribed have been thoroughly tested by Navy instructors during the

Naval Academy Midshipmen Summer Marksmanship Training Program for the past three years, and are known to produce excellent results when properly carried out. In the Navy, where training is subject to interruption by special demands of the service, it is essential that the methods of training be uniform. Where more than one method is used, even if these methods be equally good, a great loss of time and effort will be caused by transfers from one method to the other. For this reason the prescribed methods are made mandatory.

CHAPTER 2

SMALL ARMS RANGES

SECTION I
RANGE OPERATION

2101. Utilization of Ranges

a. Military Usage. Military small arms ranges are costly training aids and once constructed shall be used to capacity to realize the greatest possible small arms training return on the U.S. Government's investment. The activity constructing the range will normally be responsible for its scheduling and operation. In areas where a shortage of small arms ranges exists, Navy small arms ranges will be made available to other military services. Commanding officers will program and use the range as required, to comply with all training and competition directives. All units using any range will be required to adhere to local station safety policies and be responsible for proper discipline, equipment, security and storage, and policing of the range.

2102. Civilian Usage

a. OPNAVINST 3574.2 series authorizes use of Navy ranges by civilians. Section 113 of the National Defense Act, 3 June 1916 (39 Stat 211), "Encouragement of rifle practice," and the United States Code, Title 32, Section 316, "Rifle instruction and practice for civilians," para. 186, "Recommendations to Congress respecting rifle ranges," are some of the federal authorizations for civilian use. Additional sources are United States Code, Title 10, Section 4307-4313, and 4652, "Continuation of Other Laws." These laws permit civilian use of ranges built in part or wholly by funds appropriated by the Congress of the United States. Rifle and pistol clubs, schools, colleges, law enforcement agencies, and other organized units may use Navy ranges at times when they are not actually required for the Navy or other military services. Navy small arms marksmanship training and competition will receive first priority. Other military services including the reserve will receive second priority. Civilian agencies as mentioned above will be given third priority when the ranges are not required by the military services.

b. Civilians and civilian units are normally required to furnish their own weapons, ammunition, and targets for training.

c. Civilian units using Navy small arms ranges must exercise good housekeeping practices and procedures, and return the range to its original condition by policing the area, storing the targets and target frames, refacing the targets used, policing the brass, and other similar duties.

d. Where feasible and within personnel limitations, Navy small arms marksmanship instructors should assist civilian marksmanship activities in range operation and other technical guidance on small arms marksmanship activities.

2103. Weapon Authorization

a. Government Issue

(1) Small arms ranges are often built to accommodate specific calibers or cartridges and ones of similar or less power. An indoor pistol range using a metal deflector plate and sand trap is an example of a small arms range built to a specification. If the backstop metal is of a specification that will withstand .45 and .38 special ball ammunition velocities only, no weapon or cartridge developing higher velocities or foot pounds of energy will be permitted range usage. Weapons of such potential as the .357 or .44 magnums would in all probability penetrate

the metal backstop, or at least buckle or pockmark the metal surface, rendering the range unsafe for use. The same restrictions apply to the use of armor-piercing (or metal piercing) bullets of any type. Bullet deflector plates depend on the smooth surface to deflect bullets into a trap or catcher, and any pockmarks or bullet holes in the surface produce unpredictable ricochets. When such damage occurs, the holes should be welded over and ground smooth. Should a concentrated area be damaged, the area should be cut out and a repair plate welded in. Ground butt weld should be used on this type of repair. Where questions arise as to the backstop, a sample of the deflector plate should be tested for damage by firing at it with the ammunition in question. Pockmarks in the armor or backstop plating will receive the same treatment used for holes. All .22 caliber rimfire ammunition of long rifle or less power, fired in a pistol or rifle, may be used on all ranges authorizing .22 caliber or larger ammunition. All .22 caliber centerfire cartridges should be banned from the range until tests are made with sample backstop material to determine damage or acceptability.

(2) Small arms ranges that employ overhead baffles and earthen backstops for safety also have a limitation on weapons authorized. All students training with semiautomatic or automatic weapons will be limited to weapons firing cartridges of such power that the bullets can be stopped by the baffles. Weapons of power sufficient to penetrate the baffles but not the backstop should not be used for training students unfamiliar with weapons. Use of these weapons should be restricted to experienced personnel such as Navy gunsmiths, small arms marksmanship instructors, and controlled firing such as zeroing in weapons from bench rests or the prone position. When zeroing weapons from the bench rest or prone position, inexperienced persons will be given individual instruction and are to be closely observed by a qualified small arms marksmanship instructor during firing.

(3) The backstop capability is the limiting factor when controlled firing, test firing, or demonstration firing is conducted with weapons that could penetrate overhead baffles.

b. Privately Owned. Privately owned small arms may be fired on small arms ranges provided they do not exceed the range backstop limitation, are in serviceable and safe condition, and the owners receive permission for the occasion.

(1) Privately owned weapons are frequently used in high power rifle, pistol, small-bore rifle, trap and skeet competitions. These events may include zeroing in of weapons.

(2) Although authorized for use on Navy ranges, privately owned weapons must be fired only under the supervision of qualified range personnel or other responsible authority. "Other responsible authority" pertains to competitions, rod and gun club and other activities where a responsible commissioned officer, petty officer, or properly certified civilian assumes the responsibility for range operation. Proper qualification or certification for these persons should be NO LESS than normally assigned small arms marksmanship instructors. NRA-certified or qualified range officials, NRA-certified instructors, hunter-safety course certified instructors or similar persons with experience in range safety and proper conduct of range firing.

(3) Maximum vigilance must be maintained during such events to assure that safety procedures are followed. Since many of the personnel at such events may be dependents, or civilians who are not familiar with military small arms safety measures, the instructors, safety personnel, or those charged with functional responsibility will thoroughly brief participants on operating procedures, methods and commands. Officials will be identified by distinctive arm bands, insignia, and the like, which is necessary and appropriate. The officials will be further identified to participants during the events by the public address system or other announcing device, and participants will be reminded that full cooperation must be given to all operating officials. Failure to cooperate or adhere to instructions or directions will be cause for removal of offenders from the range. All personnel

actually participating in firing events and spectators are under the control and responsibility of the range officials.

(4) Events which civilians attend offer excellent opportunities for small arms marksmanship instructors to better educate the public in the safe handling of weapons and create a better Navy public relationship. Discipline, demeanor, and deportment of Navy personnel during these events will be in keeping with the highest traditions of the Navy.

(5) Occasions involving use of privately owned weapons, such as competitors' zeroing-in, will be conducted as the range is available, and at times that will not conflict with military training requirements.

(6) Privately owned weapons should be banned from firing if they are unsafe or in questionable condition.

(7) The range backstop must also be capable of safely stopping bullets from privately owned weapons. As previously discussed, a pistol range backstop deflector plate designed to only withstand .45 caliber service cartridges and .38 special cartridges is subject to damage by .357 or .44 magnum ammunition. These cartridges in factory loads must be banned from the range. Magnum weapons which have been loaded with hand loads or reduced velocity ammunition that does not exceed specifications for the range may be used safely. Range personnel are responsible for determining whether the cartridges are reduced in power sufficiently to permit use with the existing backstop. Commercial ballistic tables should be consulted for velocities and energies and compared with those of authorized service ammunition. Commercial ballistic tables are available, on request, from the various ammunition manufacturers.

SECTION II
RANGE PERSONNEL

2201. Chief Range Officer

a. All Navy installations possessing or having use of a small arms range require a small arms marksmanship instructor assigned as chief range officer. The chief range officer is responsible to the commanding officer for programming, maintenance, and use of the small arms ranges. The chief range officer should possess a good working knowledge of weapons and ammunition. Interest and experience in small arms range operation and knowledge of small arms competition, and ammunition is desirable. He must budget for all marksmanship training equipment and supplies. He will correct unsafe practices on the spot. Where feasible, the chief range officer should be assigned responsibility for the ranges on a full-time basis. Commanding officers determining that a full-time chief range officer cannot be assigned will assure that the individual assigned to the position can devote adequate time to this duty so that marksmanship training will not be reduced because of his absence, and that the range petty officers and other assigned personnel are well qualified and competent to complete all phases of marksmanship training in his absence.

b. The chief range officer in conjunction with the ordnance officer should make recommendations to the commanding officer concerning new small arms ranges, range modifications, and rehabilitation commensurate with the installation's mission, manning, capability, weapons authorization, and current small arms training directives. He evaluates the condition of the ranges and makes arrangements for maintenance and repairs as required. He monitors the scheduling of marksmanship training and range personnel assigned under him. The chief range officer periodically observes firing to assure that proper procedures and safe practices are being enforced. He will appoint additional range personnel as required, during special events such as small arms competitions, weapons testing and evaluation, and others.

2202. Range Petty Officer

Navy installations that possess or have use of small arms range or range system require additional petty officers to be appointed as range petty officers. They should be competent, reliable petty officers.

a. The range petty officer is appointed by the ordnance officer and is responsible to the chief range officer. He will assist the chief range officer in execution of his duties and responsibilities. Specific duties of the range petty officer are:

(1) Conducts firing.

(2) Determines and effects maintenance as required.

(3) Requisitions weapons, parts, ammunition, targets and materials, and other supplies as necessary.

(4) Supervises and instructs personnel.

(5) Prepares material consumption lists for budget programming.

(6) Enforces safety procedures on all small arms ranges.

(7) Removes any personnel from the firing line for unsafe practices.

(8) Coordinates availability of range and student quotas with units.

(9) Provides technical advice on range programming and construction, training, and competitions.

b. The range petty officer may be designated chief range officer to conduct firing in the absence of the chief range officer.

2203. Small Arms Marksmanship Instructors

Small arms training as directed herein requires well trained and qualified marksmanship instructors. The proper ratio of instructors to trainees is 1 to 500. Navy units that are manned with less than 500 personnel should have one instructor and a higher level of qualification.

a. Personnel assigned to small arms ranges will be required to instruct officers and other personnel in the correct use of their assigned weapons. In order to satisfactorily perform these duties and responsibilities they must have the ability to speak clearly and distinctly.

b. Personnel assigned to the small arms ranges should be permanently assigned except for work details or special projects. These personnel are responsible to the chief range officer and will assist him as directed, to accomplish their duties and responsibilities.

SECTION III
RANGE OPERATING PERSONNEL

2301. Individual Assignments and Responsibilities

All personnel responsible for small arms marksmanship training must be thoroughly familiar with range procedures, safety regulations, and local range regulations. The responsibilities of those assigned duties listed in subsequent paragraphs must be met. If the number of men available is insufficient to assign one man to each billet, the responsibilities should be divided among the men available.

2302. Range Officer

a. General. The range officer or range petty officer is the individual in charge of a range where live ammunition is fired. The duty assignments of the range petty officer is made by the chief range officer who has the responsibility for the range facility. See figure 2-1.

b. Responsibility. The range petty officer is responsible for, but not limited to the following:

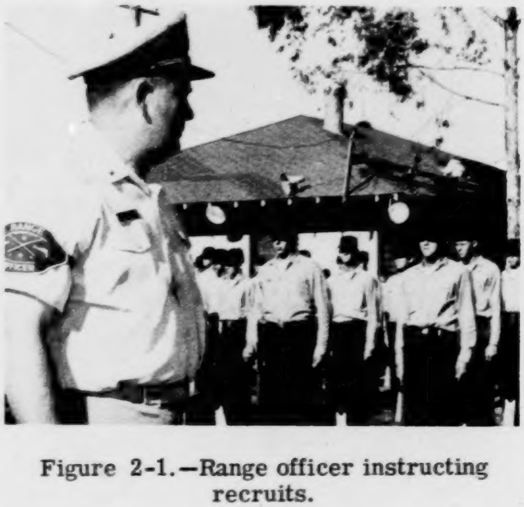


Figure 2-1.—Range officer instructing recruits.

(1) Supervision of assigned personnel. He should have the following ordnance personnel to assist him in the operation of the range:

(a) One line petty officer for each rifle and pistol range

(b) One block range petty officer for each of 10 targets

(c) One pit petty officer for each rifle range

(2) Matters relative to the assignment of men and procurement of supplies should be arranged in detail. The need for certain supply items is equally as important as the assigned personnel.

(3) Conduct of all range operating personnel.

(4) Instruction of all range personnel.

(5) Coordination of all training details.

(6) Range discipline of all individuals undergoing instruction.

(7) Enforcement of all current safety regulations and range regulations.

(8) Proper conduct of record firing to ensure that all rules governing record firing are observed.

2303. Line Petty Officer

a. General. The line petty officer assists the range petty officer. From the nature of his responsibility the billet should be filled with the most senior petty officer assigned to range duty.

b. Responsibilities. The line petty officer has the following broad responsibilities:

(1) Assignment of shooters to relays and targets.

(2) Assignment of telephone talkers, scorekeepers, and road guards, which may be made from the group participating in the training exercises.

2304. Block Petty Officer

a. General. One block petty officer is assigned for each ten targets. He assists the range officer and line petty officer in the execution of their duties in his respective target areas.

b. Responsibilities. The block petty officer has responsibility for:

(1) Enforcing safety and range regulations.

2305. Pit Petty Officer

a. General. A firm conscientious petty officer should be assigned this billet. The supervision of men in the pits is a serious matter. Constant attention is required to prevent operation failures and to ensure enforcement of safety, and range regulations.

b. Responsibilities. The pit petty officer has the responsibility for the following broad areas:

(1) Enforce safety and target pit regulations.

(2) Control operation of the pits.

(3) Conduct of personnel assigned to the pits.

2306. Armorer

a. General. Regardless of the condition of firearms, the firing of live ammunition may present the need for minor repairs and safety regulations. For this reason, the chief range officer should be a qualified armorer.

SECTION IV
SMALL ARMS MARKSMANSHIP INSTRUCTORS DUTIES

2401. General

Small arms marksmanship instruction is an extremely important and highly technical job that must be done well. The most valuable man in our marksmanship training program is one who not only has attained a high standard of efficiency with the basic weapon himself, but who also is qualified to effectively transmit this knowledge and ability to others. It is well worth the effort to train a Navy man to become a successful instructor, because experience has shown that such training improves the individual's overall capability.

2402. Individual Responsibilities

The small arms marksmanship instructor's primary responsibility is to teach individuals in the effective use of the weapon and absolute safe handling.

2403. Individual Qualifications

To be a good instructor he must not only understand all the steps necessary to produce accurate shooting, but must also understand instruction techniques and have certain other qualifications. These individual qualifications are:

a. Knowledge. The primary qualification for an efficient small arms marksmanship instructor is a thorough knowledge of the weapon and proficiency in its use. He must be prepared to answer questions accurately on the subject of marksmanship. He must develop his ability to observe the actions of the student quickly, analyze and correct faulty procedures with sound recommendations.

b. Patience. The instructor will encounter many types of men to try his patience; dull, know-it-alls, uncooperative, aggressive, uninterested, etc. All of these types must be handled with calm persistence, patience, and persuaded through demonstration and repetition to accept the principles and procedures set forth in instructions.

c. Understanding. An instructor with a good "firing line manner" also enhances his chances for success. The student under instruction is laboring under a strain. He is very sensitive to abruptness, impatience, or lack of sympathy with his difficulties and will immediately react unfavorably to evidence of such an attitude on the part of the instructor.

d. Consideration. Most men, even those who do not shoot well, enjoy shooting and start out with a lively interest in their work on the range. The instructor should consider this and encourage individuals throughout the training.

e. Maintaining Respect. The fact that a man is assigned the duties of an instructor classifies him, to those who come to him for instruction, as a technical expert and an authority. The instructor will retain the respect of the students throughout the training period by displaying a thorough knowledge of his subject in a quiet, dignified manner.

f. Alertness. Even some of the most apt shooters, in the excitement of firing on the range, will forget or neglect some essential point in their instruction. The instructor must be ever alert for mistakes and patiently correct the shooter as often as may be necessary. He must keep the man encouraged throughout his instruction by making the most of progress attained, however slight, and he must check at once any disposition to become discouraged or to lose interest.

g. Attitude. In instructing on the range, as in most other lines of teaching, a combative "hard boiled" attitude is rarely effective. A blustering attitude, "chewing out" the student in the presence of others, or the use of profane language, merely creates a sullen resentment and destroys the value of the instruction. Only in case of repeated carelessness with respect to safety precautions is severity required and justified.

h. Providing Encouragement. The instructor should encourage the shooter by convincing him that there is no mystery about good shooting; that the weapon and ammunition are highly developed mechanically for accuracy; that poor scores are due to lack of knowledge and practice of good shooting habits; and that the instructor is there to impart that knowledge and to assist the shooter to gain the practical experience which will make him a good shot. He must emphasize the fact that close observance of a number of simple rules is the secret of success, and that strict attention to the instruction is essential in order to clearly grasp every point covered.

2404. Steps of Instruction

a. General. Marksmanship training must follow certain steps of instruction which, if carried out correctly, will result in highly proficient marksmen. If one of the steps is incorrectly performed, the shooter will not get the desired results. It is the instructor's duty to see that each shooter performs the steps correctly.

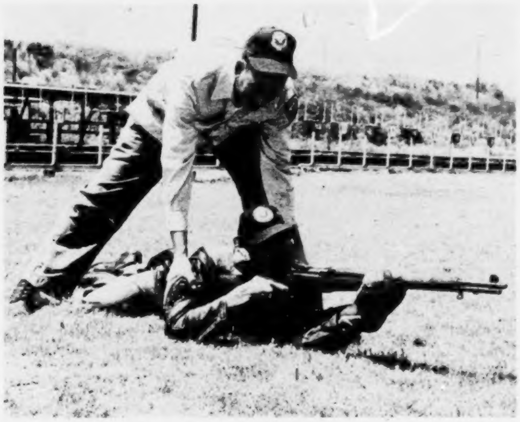


Figure 2-2.—Small arms marksmanship instructor assisting student in assuming the correct position.

b. Basic Steps of Instruction. The eight basic steps of instruction are:

(1) Sighting and Aiming. The instructor must ensure the shooter understands and applies the correct method of aligning the sights and their relationship to the target. See figure 2-2.

(2) Position. The instructor must have a thorough knowledge of the elements that make up a good position so that he can teach the shooter the proper position. The elements that make up a good position are:

(a) Bone support. (Rifle only.)
(b) Muscular relaxation.
(c) Natural point of aim.
(d) Proper use of the sling. (Rifle only.)

(3) Trigger Control. The instructor must be familiar with the common causes of faulty trigger control in order to effectively detect and correct the error. It may be recognized by the shooter's reactions of flinching, bucking, or jerking.

(4) Rapid Fire. Since time is the greatest factor affecting rapid fire, the instructor must train the shooter in the correct procedure. This can be done in rapid fire exercises by blending the elements of good position, sighting and aiming, trigger control, breathing, and reloading (rifle).

(5) Sight Adjustments. To make proper adjustments for his shots or shot groups, the shooter must be taught the operation of the rear sight, the elevation and windage rule, and the method used to compute sight changes.

(6) Effects of Weather. The elements of weather that have an effect on shooting are wind, light, temperature, and humidity. With the exception of wind, these conditions affect some shooters differently than others. The instructor must have a complete understanding of all conditions that affect a shooter to properly instruct his students.

(7) Zeroing. The instructor must have a thorough knowledge of the principles of zeroing, the method of zeroing, and sight calibration to teach the shooter the correct procedure of zeroing.

(8) Use of the Score Book. One of the greatest problems the instructor encounters is teaching the shooter to use his score book correctly. In most cases, this can be overcome by impressing on the shooter the importance of the score book. See figure 2-3.

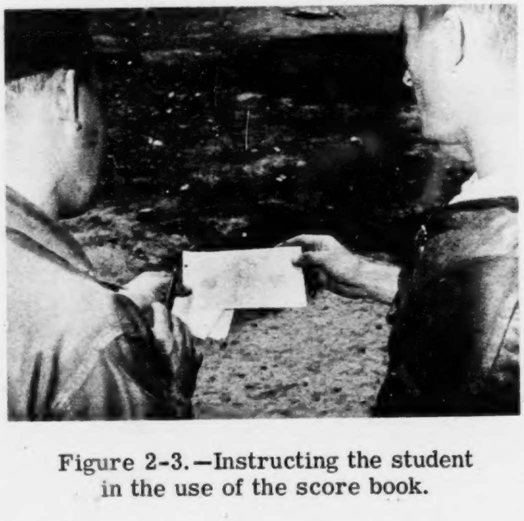


Figure 2-3.—Instructing the student in the use of the score book.

SECTION V
RANGE SAFETY

2501. Ten Commandments of Safety

There are many rules of safety that, if adhered to, will prevent accidents while handling small arms. The following safety rules are general but cover most potential accident situations.

a. Treat every gun with the respect due a loaded gun. This is the first rule of gun safety.

b. Guns carried into the station, home, or other places away from the shooting area, or when otherwise not in use, must always be unloaded and have the actions open, or should be cased. This applies in going to as well as coming from the shooting areas.

c. Always be sure that the barrel and action are clear of any obstruction and that you have only ammunition of the proper size for the gun you are using. Remove all oil and grease from the chamber and barrel before firing.

d. Always carry your gun so that you can control the direction of the muzzle even if you stumble. Keep the safety on until you are ready to shoot.

e. Be sure of your target before you pull the trigger. If positive identification of the target has not been made, DON'T SHOOT.

f. Never point a gun at anything you do not want to shoot; avoid all horseplay while handling a gun.

g. Unload unattended guns. Store guns and ammunition separately, beyond the reach of children.

h. Never climb a tree or fence or jump a ditch with a loaded gun; never pull a gun toward you by the muzzle.

i. Never shoot a bullet at a flat, hard surface or the surface of water. When shooting at targets or game be sure that your backstop is adequate.

j. Certain drugs and medications may temporarily impair sight and reflexes and should be avoided before and during shooting. Do not drink alcoholic beverages before or during shooting activities.

2502. Unsafe Acts

a. Unsafe acts may occasionally be committed on small arms ranges. An incomplete listing of unsafe acts includes proceeding in front of the firing line before command, pointing a weapon in an unsafe direction, shooting unsafe ammunition, using a mechanically unsafe or inadequate weapon, disobedience of orders, horseplay, and loud language.

b. In order to operate a safe range, range personnel will correct all unsafe acts immediately by command or if necessary, by physical intervention, as the circumstances require. Range personnel will then administer a brief explanation of the act to the offender, the reason for the correction, and the safe policy or procedure normally employed. Reasonable tact and diplomacy should be employed during corrective action; however, the corrective action will be immediate and firm. Any repetitions, disregard of instructions, or flagrant violation of safety practices will result in the immediate removal of the person or persons from the range. Range personnel have the responsibility of enforcing proper safety procedures and practices on small arms ranges. They have the prerogative and duty to remove from the firing line or range any person or persons whom they consider unsafe. Range personnel will maintain safety discipline on small arms range by close surveillance of shooting activities.

2503. Road Guards

a. Road guards may be required for directing or blocking traffic on some small arms ranges. They are not required on roads that approach the firing line from a safe direction. Signs denoting approach to a small arms range and proper use of range flags are adequate warning to personnel approaching in vehicles. However, if there are roads that enter impact or similar danger areas, and they are not equipped with fences, gates, or adequate barriers to prevent vehicles from trespassing, road guards should be posted on the range perimeter. A road guard will prevent entry into the danger area until daily firing has been completed and he is withdrawn from his post. Road guards are generally selected from personnel who are scheduled for training but are awaiting their relay, or who have already fired. When special traffic problems exist, a road guard or guards may be used to direct traffic, such as to special parking areas or over designated routes. When heavy traffic is anticipated, as at competitions, the local military police should be contacted for skilled personnel to handle traffic problems.

b. Road guards should be posted at frequently used trails or footpaths, and at places where children in the vicinity might trespass into danger areas of the range, if these situations exist and adequate fences or barriers have not been erected.

c. Road guards are not required where adequate gates or barriers and signs provide proper warning to approaching persons.

d. They may be required when a firing range is located in close proximity to the approach patterns of aircraft, to provide proper warning to the chief range officer.

2504. Trespass Notices

a. Trespass notices are of two types, those posted by signs and those printed in publications. Publication notices are normally printed in local commercial newspapers and in the Navy Base Plans of the Day. Notices to the public should be placed as legal notices in the newspaper or newspapers serving the local area The notices should give the location of the range or ranges and state that trespassing is illegal and dangerous due to the firing of small arms. Offices, personnel, and phone numbers to call in case of valid need for entry should also be contained in the notices.

b. Normally the small arms range or ranges are off limits to all unauthorized personnel. Anyone who needs to enter a range area, other than the normally inhabited portion behind the firing lines, must contact the range office for permission. This is a routine safety precaution to prevent personnel from entering a designated danger area when the range may be scheduled for live fire.

c. Naval bases with large range areas may have a potential for hunting, fishing, picnicking, or other recreational activity. Recreational activities will not conflict with training requirements. Where conflict arises, the marksmanship training requirements outlined in this manual and the Landing Party Manual, 1960, will have first priority. Personnel, both military and civilian, when using the range for hunting will first demonstrate their proficiency and knowledge of firearms safety to designated officials. Local requirements will dictate the content and scope of examinations for hunters; however, examination should include an approved hunter safety course. Range officials will coordinate with the safety officer in determining standardization and restrictions for the course. The safety officer will also assist with local requirements for range usage.

d. When the range area is used for recreational purposes, the date and hours of occupancy should be posted in the base "Plan of the Day" once a week. After the recreational season is over, the range should revert back to a no-trespass basis, and several weekly notices to this effect placed in the "Plan of the Day." Small arms range use and firing schedules are required to be placed in the local instructions. Small arms ranges are off limits to all unauthorized personnel and should be so designated on signs around the range area. Small arms marksmanship instructors and persons with written permission from the chief range officer or range petty officer may enter and use the range property during other than normal duty hours.

2505. Display of Flags and Streamers

a. Flags and streamers are used on small arms ranges for several reasons, but primarily for safety. A tall flagstaff flying a red or scarlet streamer with 18-foot fly and a halyard width of 5 feet 9 3/8 inches should be located adjacent to the road or entrance to the range or range system. Fully raised, this flag signifies that firing is scheduled or is in progress on the range, or in one or more ranges of the range system. At half mast it signifies that the range, or one or more of the ranges of a range system, is occupied but no firing is permitted. The first person to enter the range or range system raises the flag to the proper position for the scheduled activity and the last person to leave the range area hauls it down and stores it. No flag displayed means the range is not in use and not occupied.

b. A range has one type of firing, such as pistol, rifle, or machinegun, and contains one firing line. A range system is a range complex comprising two or more types of ranges or one type of range divided into separate bays or ranges. Each range and each bay or firing line of a range system should have an additional individual range flag. Flag positions have the same meaning as previously mentioned, but signify the condition of the individual range, or firing line. The first person to occupy the range or firing line raises the flag to the appropriate position for the activity to begin.

c. Where a single range exists (one firing line) and the range flag can be clearly viewed from the approach road and firing line, one flag may suffice. Range systems that have multiple types of ranges or multiple firing lines require a range flag on the entrance road and individual flags at each firing line. The exception is a high power rifle range where the flag at the entrance of the range is sufficient to indicate firing in progress on each firing line, that is, 200-yard, 300-yard, and 600-yard lines. Individual range flags should be flown fully raised during firing and may be left at the fully raised position during scoring, target changes, and while successive relays are ready to occupy the firing line. They should be lowered to half mast during long breaks between firing, and at any other time the range is occupied and not actually being used; for instance, during chow breaks, rest periods, and so forth.

d. Firing will cease immediately on the firing line of individual ranges of a range system when the respective flag is lowered. Firing will not commence until the flag has been raised. All firing on the range or on all ranges of a range system, will cease immediately should the range flag proper be lowered. Firing will not commence until it has been fully raised.

e. Range flags and streamers may be requisitioned through normal channels (see Small Arms Targets and Target Material, NAVPERS-15217). The most prominent danger flag is the streamer that is 5 feet 9 3/8 inches at the halyard end, has an 18-foot fly, and is 3 feet wide at the fly end. The halyard end is bound with webbing and has a 1 1/2 inch "D" ring with rollers sewed on each end. The streamer material is scarlet cotton bunting. As this is the largest flag normally used on ranges, it should be used as the range flag. On a range system of multiple ranges, this flag or the smaller 24 inches x 36-inch fly flag may be used for the individual ranges. The large 18-foot fly should be used for target pit flags on all high power rifle ranges at distances of over 300 yards. For 100- to 300-yard training and competition courses of fire, the smaller 24 x 36-inch flag is optional for target pit use.

f. The red signal flag, 24 inches wide x 36-inch fly, is reinforced on one end with webbing and has a 1-inch "D" ring sewn on each end. This flag may be used at target pits for ranges not to exceed 300 yards. It is also permissible for use on individual ranges of a range system that displays the large flag elsewhere on the range system. It may be fastened to a marker disc staff and used in the target pits to signal misses.

g. When one rope or cable halyard requires replacement, all range flag halyards should be inspected to see if others need replacing. Halyards may be changed by splicing new cable or line to the old one and pulling the new one into place. Many Navy installations have vehicles with hydraulic ladders used for elevating personnel to aircraft or for changing street lights, and may be used to change flagstaff pulleys, eyebolts, or halyards.

2506. Cease-Fire Commands

The command "Cease Firing" is normally given by the range officer or petty officer conducting the range firing. However, in case of an accident or an unsafe condition that may result in an accident, anyone on the range, whether range personnel, road guard, or shooter, should give the command "Cease

Firing" in a loud, distinct voice. It is the duty of all shooters to cease firing immediately upon the command, regardless of who gave it. Upon receiving this command, the shooter will immediately remove his finger from the trigger and trigger guard, regardless of how near he is to getting a shot off, and clear, place safety on "safe" (rifle), and ground his weapon. Range personnel will insure that the condition that caused the cease fire command is corrected and firing may resume. Shooters will be given an alibi course of fire to compensate for the interruption. The "Cease Firing" command may be executed verbally, by a blast on a horn or whistle, or by exposing only the targets' edge on a pistol range, or moving the targets out of view by pulling them down into the target pits.

2507. Communications

a. Small arms ranges require various communications for safety. There are three places where communications are required, namely from range to the base installation, from firing line to target pits (where so equipped), and from range official to shooter. Good communications enhances safety. A study of accident statistics of small arms range operation has resulted in a re-evaluation of the need for an ambulance on ranges during firing. Having an ambulance and driver standing by during firing is extremely costly, considering that the average installation will operate small arms ranges several years between accidents requiring medical attention. All Accidents on ranges run the gamut of injuries, which are mostly minor, occurring at other places on the installation and are not, as might be believed, usually gunshot wounds. In order to economize on manpower and vehicle operating expenses, several safety measures have been evaluated and revised. The ambulance and driver are no longer required. In their place, have available a serviceable vehicle, a first aid kit, and telephone communication with the base installation. The vehicle and first aid kit afford adequate first aid and means for evacuation. If the injury is serious, use the telephone to request military escort and advise the hospital that an emergency is on the way. Before daily firing, check the telephone system linking the range or ranges with the parent installation for serviceability. Also check the communication between the firing line and the target pits before firing begins.

b. For safety, it is imperative that all commands executed on the firing line be distinctly audible to all personnel on or near the firing line. A command not heard can result in confusion and misunderstanding that could cause an accident. A command must be audible to the farthest shooter as well as the nearest, without the necessity of repeating it.

c. All small arms ranges require a public address system to project range commands audibly and distinctly. Ranges not supplied with electricity should have electrical service extended to them or use portable generators. A portable megaphone may be employed on small ranges. Distinctly audible at both ends of the firing line, it is also used as an emergency standby for the public address system.

2508. Control of Spectators

Spectators frequently come to small arms demonstrations, training exercises, competitions, and other types of firing. They should be encouraged to watch all phases of small arms training and weapon firing. Watching other personnel train with weapons and fire them can stimulate interest in marksmanship and the safe use of small arms.

a. Spectators must be properly positioned to the rear of the firing line or firing activity. Normally, spectators will be required to stay behind the firing line; however, in special demonstrations or inspections of firing activities where experienced personnel are demonstrating weapons, or the inspection party consists of several personnel, observation may be from the firing line. Range personnel will be exceptionally observant of the spectators and shooters when spectators are permitted on the firing line. Spectators will be cautioned to remain behind or to the side of shooters and always stay to the rear of the muzzle of all weapons on the firing line. The firing line is normally off limits to spectators. The firing line and the area for authorized spectators should be well defined with proper signs and marking.

b. Range personnel are responsible for range safety and the control of all spectators. Spectators that compromise safety or create a distraction to shooters or range personnel will be removed from the firing line area and the spectator area. Range personnel have the prerogative to remove from the small arms range any spectator that they deem unsafe or too distracting to the shooters.

SECTION VI
FIRING PROCEDURES

2601. General

Each time the range is opened for firing, the chief range officer will make certain that the range and impact areas are clear.

2602. Briefing

The personnel scheduled to fire a stage or string of fire will, prior to firing, be briefed by authorized range personnel. This briefing should be short and include, but not limited to, course of fire, positions used, time limits, and so forth. Safety will also be included in the briefing, re-emphasizing those procedures established in this manual, plus any general or special instructions applicable to the specific range. Verbally receiving the courses or strings of fire to be shot is important, as it reduces confusion and therefore accident potential. If any questions or doubts are in the trainee's or competitor's mind, they may be answered at this time, allowing him to concentrate afterwards on his shooting performance, and not on something, that may create an undesirable accident situation. This briefing is much more critical when the shooter is an annual trainee and is not thoroughly familiar with the courses of fire or competition.

2603. Assembly Line

The assembly line is located behind the ready line and parallel to the firing line. Here shooters assemble behind their respective firing points to inventory and prepare their shooting gear before proceeding to the ready line. The assembly line generally pertains to high power rifle ranges. Shooters proceed from the assembly line to the ready line on command of range officials only.

2604. Ready Line

The ready line is located immediately behind the firing line. Here the shooter remains directly behind his assigned firing position until the preceding relay has cleared the firing line and personnel on the ready line are ordered to the firing line. The ready line is generally used on high power rifle ranges during competition, but has a practical application in annual recurring training, where several relays must be conducted one after the other and constant control of personnel is desirable.

2605. Firing Line

This is the imaginary or actual line where the shooter occupies a predetermined position and actually fires his stage or string of fire.

a. The firing line is occupied on command only. Here the shooters are given additional reminders of safety or operation, procedures to be observed, and the stage or string of fire to be performed. Range personnel must be very observant during the period when personnel are approaching, occupying, or departing the firing line, as this is one of the times when a breach of safety is likely to occur.

b. All weapons should be transported to and from the firing line with the actions open, slides locked open, and cylinders swung out, or they should be cased. Cased weapons will be made safe immediately upon uncasing, and during this process they will be held in an appropriate down range direction.

c. Weapons transported to the firing line should be grounded at the firing position with the actions open and muzzles pointed down range. Weapons on the firing line will be handled upon command only, after being transported to the firing line and grounded.

d. No one will be permitted forward of the firing line until the firing line has cleared. "Cleared" means all weapons grounded with actions open, safeties on, and range personnel visually assuring these conditions by inspection. During stages of fire, range personnel will have to insure that no one assumed a firing position encroaching upon territory in front of the firing line, or aligned with other shooters. To prevent this occurrence, close observance of the shooters when they take a preparatory or dry firing position will usually show violators, if any, and remedial action will be taken.

e. Only shooters and range officials will be allowed on the firing line during stages of fire. Coaches and other personnel may be authorized at certain times for special events or training, as required. Control of the shooting and nonfiring personnel occupying the firing line is the responsibility of the Range Officer.

2606. Scoring

a. Shot holes that are mostly outside of a scoring ring but touch it will be given the higher value.

b. Competitive scoring will be done as prescribed by applicable rule books, regulations, and the like, published by the governing body of the appropriate competition, namely NRA, ISU, and so forth. Small arms competitive rules published by the controlling agencies are subject to constant change and revision; therefore, the small arms range section of each installation should maintain current rules and directives published by these various shooting organizations on the types of competition to be conducted on the local ranges. Range sections should also have a complete set of scoring gauges in their possession.

SECTION VII
PIT OPERATIONS

2701. General

All personnel that occupy a target pit during firing must receive instruction in the proper and safe methods of operating the targets. Target operation during firing cycles is safe, only if several basic safety rules are adhered to. See figure 2-4.

a. Annual training conducted on target-pit ranges requires half of the trainees to pull targets while the other half of the class fires. These trainees will need a thorough briefing preceding target operation.

b. Target pit details used for competitive exercises should be available several days before the events and be trained by range instructors in the classroom and in actual target pit operation. Practice before the competitive exercise gives range personnel a chance to review the detail in action and to correct deficiencies.

c. The briefing before target operation will include the following topics:

(1) Safety:

(a) Never expose your person to the firing line after entry into the target pits.

(b) Never proceed behind the targets during a firing cycle or without permission of the pit petty officer or pit block petty officer.

(c) Where combination targets are used, operate both targets by actuating the front target. Never reach through the frame and actuate the rear target.

(d) Never leave the pits unless told to do so by competent authority. The firing line must be clear and all weapons inspected and on safe.

(2) Duties:
- (a) Target hanging.
- (b) Target changing and repair.
- (c) Scoring.
- (d) Communications.

2702. Displaying Warning Flags

a. The target pit flags are located at each end of the target pits. The target pit flags will be raised immediately upon entering the target pits. A flag in the raised position warns the firing line that personnel occupy the target pit. The last person to leave the target pits will haul down and store the flag.

b. In case of emergency the target pit flags may be lowered to effect an immediate cease fire. This will generally not be

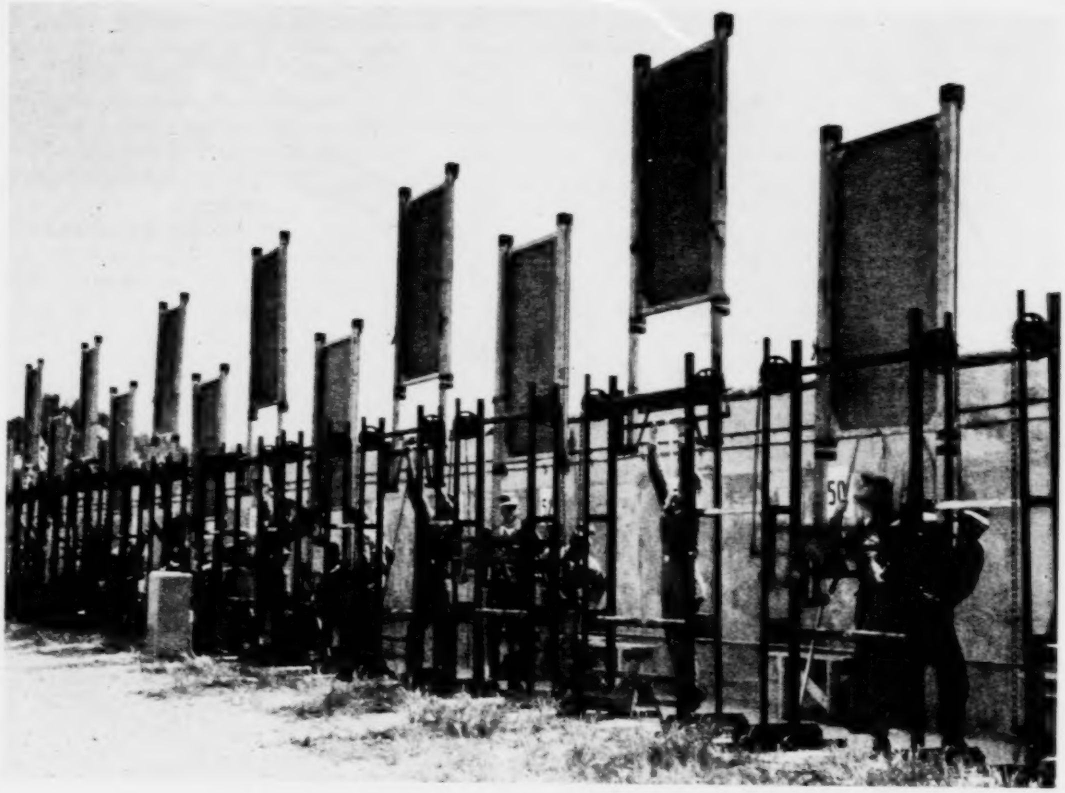


Figure 2-4.—Pit operations.

required if telephone service is still in operation. However, should the telephone be inoperative, the targets should be lowered into the target pits and the flags lowered. Lowering the targets and the pit flags indicates an emergency in the target pits. The range officer will effect an immediate cease fire and proceed to the target pits to determine the trouble.

2703. Establishing Communications

Immediately upon entering the target pits, after the flags have been raised, personnel will be detailed to hook up or connect the field telephones to establish communication with the phones located on the firing line. Phone communication with the firing line is necessary for safety, proper execution and command of courses of fire, and scoring. Once in the target pit, personnel are not allowed to expose themselves to the firing line until it has been determined that the firing line is all clear, i.e.: (weapons grounded, shooters off the firing line). The telephone operator, upon command of the range officer, may inform the target pit of the clear firing line, and the detail there may then, upon request, expose themselves above the surface of the pits. If telephone service is interrupted, the course of fire should be completed before cease fire, clearing the firing line, and repairing the trouble. Should an emergency occur in the target pit after the telephone becomes unserviceable and during the course of fire, the target pit personnel will take the cease fire procedure given in the preceding paragraph.

2704. Servicing Targets

Target repair or replacement should be made as required. Before closing the small arms range daily, the range petty officer should assure that adequate targets of the proper type, size, and in serviceable condition are available for the next day's firing cycle.

a. After the target pit flags are raised and while the telephones are being connected, the target pit detail should get the targets from the target storage shed and hang them on the carriers. Adequate spotters and spindles, markers, black and white pasters, flags, and the like, will be distributed to all firing points being operated.

One roll of black and one roll of white pasters per target are adequate. Pasters come 500 to the roll. Also, one flag per target is required. This flag is used for signaling misses. This flag can be locally manufactured by tacking the 24-inch wide and 36-inch fly red danger flag to a marker staff.

b. The course of fire determines the target servicing requirements. The pit petty officer will inform the pit detail of the forthcoming courses of fire and target service required. For example, slow fire, ten rounds, pull targets, score and paste after each shot; or rapid fire, ten shots, raise and pull targets on command only. The chief range officer will inform the pit petty officer and the line petty officer what the next course of fire will be and what the special requirements or instructions are.

c. During annual training, one person will operate one target; however, during a competitive exercise, six persons should be available to operate five targets, thus providing for one relief. Each target puller is responsible for the proper operation of his target and, for competition purposes, should be thoroughly familiar with scoring procedures in National Rifle Association Rules, or those of any other applicable governing body (International Shooting Union, etc.), the match program, duties of officials, bulletins, challenge procedures, communication procedures, and the like. Target pullers will be familiar with firing line commands and telephone messages.

d. The following points are not covered by National Rifle Association Rules but are presented for standardization of pit procedures when marking high power rifle targets in competition:

(1) After a string of rapid fire the targets are pulled down on command and the FIRST step in the target puller's operation will be to count the shot holes. NO spotters will be placed in the target until all ten shot holes are found, or in the event of less than ten hits, when the block officer says to place them. Spotters will not be inserted into shot holes if they are of doubtful value. This is extremely important, because once a spotter is placed in a shot hole, that hole cannot be plugged with a scoring gauge.

(2) If upon completion of a string of rapid fire less than ten shots are found, the target operator will call the pit petty officer, and the pit petty officer will inspect the target. If less than ten hits are found, the pit petty officer will call the line petty officer, who in turn will notify the competitor, who at this time may challenge if he so desires. If a challenge is made, the pit petty officer will plug each shot hole and make his decision. He will notify the line petty officer of his decision and will then instruct the target puller to put spotters in the target, raise the target, and disk the value of the hits upon command of the chief range officer.

2705. Disking Procedures

a. The target puller will be thoroughly familiar with disking procedures. When a shot is fired in slow fire, the target puller will pull the target down, find the hole, and place the spotter in the hole. The target is run up, and the value of the hit signaled to the firing line with a disk.

NOTE: During this process the puller must keep track of the number of rounds fired and the value of each shot by placing on the lower part of the target the number of rounds and the value of each round as it is fired, until the required number of shots have been fired.

b. In sustained fire the target is exposed to the firing line at the appropriate time interval, and upon command, the target pullers bring the targets down. They count the number of holes. If all shots are on the target, a spotter is placed in each hole and the target raised. The point value of each hit is signaled to the firing line with a disk. The highest value hits are disked first, and count down sequence is maintained until the value of all shots has been signaled. Disking procedures are as follows:

(1) To signal a V, the white disk is raised vertically up the right side of the target until horizontal with the bull's-eye, moved across the face of the target, then lowered vertically down the left side of the target.

(2) To signal a 5, the white disk is raised vertically up the center of the target, held momentarily over the center of the bull's-eye, then lowered vertically.

(3) To signal a 4, the red disk is raised vertically up the right side of the target to the upper right hand corner, held momentarily, then lowered vertically.

(4) To signal a 3, the red disk is raised vertically up the left side of the target to the upper left-hand corner, held momentarily, then lowered vertically.

(5) To signal a miss, the red flag is waved once across the face of the target from right to left (when facing the target).

2706. Scoring

a. Scoring of all competitions will be in accordance with National Rifle Association Rules, or other governing body, as applicable. Respective rule books will be consulted for current proper procedures and techniques.

b. Scoring during annual training should follow procedures for disking except that the target puller should record the score on the shooter's score card and challenges are prohibited. The shooter will be given the benefit of the doubt, such as a close examination for a shot hole that two bullets might have gone through in a tight group.

CHAPTER 3

BASIC RIFLE MARKSMANSHIP TRAINING

SECTION I
GENERAL

3101. Purpose

The purpose of basic rifle marksmanship training is to teach an individual the principles of marksmanship and prepare him for known-distance range firing.

3102. Training

a. General. A rifleman must develop proficiency in detecting targets, determining the ranges to targets, and hitting the targets. The factors affecting a rifleman's ability to fire and hit the target are relatively constant. Essentially, the rifleman must be able to assume a firing position which affords him protection and at the same time permits unrestricted observation of the target area. He must hold the rifle in such a manner that he and his rifle form a single unit. He must know how to correctly align his rifle on the target, and finally, he must be able to fire his rifle without disturbing this alignment. The skills needed to accomplish these requirements are known collectively as rifle marksmanship fundamentals.

b. Progressive Training. As stated previously, the degree of proficiency attained by a rifleman is largely dependent upon learning and applying marksmanship fundamentals. It is important to remember that all marksmanship training is progressive. An individual should not be allowed to fire on a range until he has received basic marksmanship training. Basic preparatory marksmanship training is covered in eight steps.

(1) Sighting and aiming exercises (instruction in the proper relationship of the eye, sights, and target).

(2) Position exercises (proper application of all positions used in range firing).

(3) Trigger control exercises (the act of firing the rifle without disturbing the sights).

(4) Rapid fire exercises (the act of firing a number of rounds quickly within a specified time limit).

(5) Sight adjustments (the proper manipulation of the sights to regulate the striking position of the bullet).

(6) Effects of weather (an explanation of the weather conditions that affect the shooter and bullet and how to compensate for these conditions).

(7) Zeroing (the adjustment of the sights to hit a target at a known range).

(8) Use of the score book (recording shots and conditions that affect the bullet and shooter).

c. Safety and Care of the Rifle. In addition to safety precautions, care, and cleaning of the rifle are subjects of special importance and should be thoroughly emphasized throughout the training cycle.

SECTION II
SIGHTING AND AIMING

3201. General

Accurate shooting requires exact alignment of the sights with each other and with the aiming point. To do this, he must have the rear sight, the front sight blade, and the target or aiming point in their proper relationship. This relationship is known as the sight picture. Sight picture involves two elements: sight alignment and placement of the target or aiming point. Remember a small error in sight alignment will produce a large error at the target.

3202. Sight Alignment

Figure 3-1 illustrates the correct sight alignment. The top center of the front sight

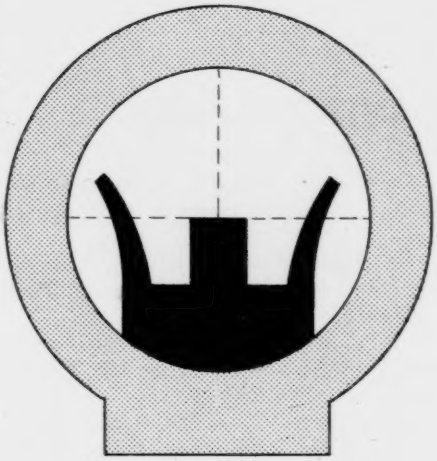


Figure 3-1.—Correct sight alignment.

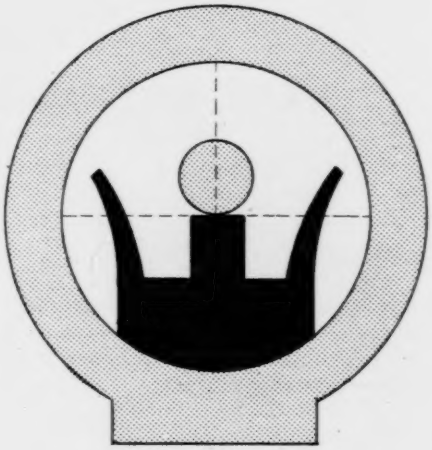


Figure 3-2.—Correct placement of the aiming point.

blade is exactly in the center of the rear sight aperture. An imaginary horizontal line is drawn through the center of the rear sight aperture; the top of the front sight blade will appear to touch this line. An imaginary vertical line is drawn through the center of the rear sight aperture; the line will appear to bisect the front sight blade.

3203. Placement of the Target or Aiming Point

The aiming point is correctly placed when it is centered on the top of the front sight blade. An imaginary vertical line drawn through the center of the front sight blade will appear to cut the target in half. (See fig. 3-2.) An imaginary horizontal line drawn across the top of the front sight blade will appear to cut the target in half.

3204. Sight Picture

The correct sight picture is obtained when the sights are properly aligned and the aiming point is in correct relationship to the front sight blade. (See fig. 3-2.)

3205. Importance of Sight Alignment

a. Eye Focus. At some point in his marksmanship training, a Navyman may experience difficulty in hitting the target even though he appears to be applying the proper marksmanship fundamentals. The trouble may be either incorrect sight alignment or improper placement of the aiming point. If the shooter understands the principles of aiming, he will rarely commit both errors simultaneously. The reason for this lies in the peculiarities of the eye. The eye cannot focus on two objects at different ranges at the same time. If the shooter focuses his eye on the target, the rifle sights will appear hazy and indistinct, greatly increasing the possibility of incorrect sight alignment. Conversely, focusing the eye on the front sight blade causes the target to become indistinct. Therefore, the problem is whether an error in sight alignment or placement of the aiming point causes the larger error.

b. Comparison of Errors. An error in either sight alignment or placement of the aiming point will cause the bullet to miss the target; however, a sight alignment error results in a miss that grows proportionately greater as target range increases. On the other hand, an error in the placement of the aiming point causes a miss that remains constant regardless of the range. On the battlefield, a near miss as a result of an aiming point error can be as effective as a point of aim hit. For example, a man-size target is approximately 20 inches wide. Consequently, a rifleman could be several inches off his desired aiming point and still hit the enemy. However, if the error was due to sight alignment, the bullet could miss a man-size target by as much as several feet, depending on the range. Sight alignment is more important than placement of the aiming point.

c. Method of Sight Alignment. To ensure the correctness of the sight alignment, the eye must be focused on the front sight blade at the instant the rifle fires. The target cannot be ignored, so the shooter must alternately focus his eye between the target and his front sight blade. Initially, he should focus on the front sight blade and properly align his sight. Secondly, shift his focus to the target and complete the sight picture. Finally as he moves the trigger, the focus of his eye to the front sight blade ensures correct sight alignment as the rifle fires. At this moment, the sight picture should be similar to that shown in figure 3-2. Notice that the front sight blade is distinct while the target and rear aperture appear to be slightly blurred.

3206. Eye Relief

Eye relief is that distance from the rear sight aperture to the eye as illustrated in figure 3-3. The shooter should keep his eye as close to the rear sight aperture as possible without straining the muscles of the neck to do so. The closer the eye is to the aperture, the more target area will be visible. The shooter should try to place his eye in the same location regardless of his position. Since this is seldom achieved, it is important to endeavor to have the same eye relief for all shots fired from a particular position. This is accomplished by use of the spot weld, which is the relationship of the shooter's face and grip with the rifle. The spot weld will be discussed more in the explanation of positions in section III of this chapter.

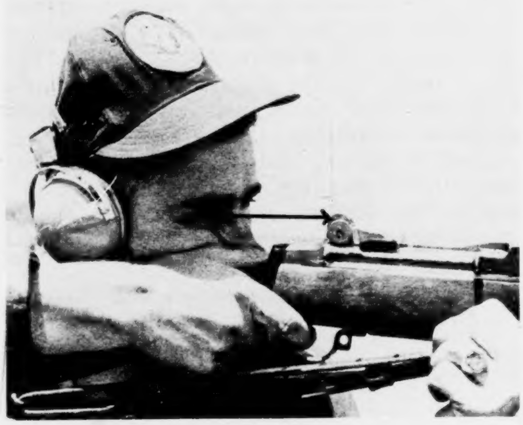


Figure 3-3.—Eye relief.

3207. Cleaning and Blackening Sights

a. Purpose. A rifleman can experience difficulty in obtaining a proper sight picture because of shiny or dirty sights. A shiny front or rear sight will produce glare and partially blind the shooter. Dirt can change the distinctive outline and cause error in alignment. Thus, it is important in training and in combat to keep the sights clean and blackened. A rifle patch or lint-free rag may be used to clean the sights.

b. Methods of Blackening. There are several methods of blackening the sights. A few commonly used include the smudge pot, carbide lamp, oily patch, candle, cigarette lighter, or an ordinary match.

c. Care of the Sights. The rifle should never be dropped or subjected to any treatment that might burr or bend the front sight blade. The sight blade guards have been designed to protect the sight blade, but each individual must exhibit careful handling to avoid damaging the sight. The rear aperture should be all the way down when not in use, as the slightest knock may loosen or break it.

3208. Sighting and Aiming Exercises

There are three (3) aiming exercises which may be used to effectively teach the principles of correct sight picture. These exercises are best conducted by organizing the unit into two distinct groups called "relays." One relay is designated as shooters, while the other act as instructors. As each phase is completed, the relays should exchange functions; that is, the shooter becomes the instructor and the instructor becomes the shooter. One instructor should be available for each ten shooters to supervise these exercises.

a. First Aiming Exercise. The instructor explains the proper method to obtain the sight picture using the M15 sight device. (See fig. 3-4.) Each shooter is then issued a device and required to establish correct sight alignment and correct placement of the aiming point. The instructor checks the shooter's results and determines if a correct sight picture has been obtained. This exercise should be continued until the instructors are satisfied that all shooters understand the principles and are capable of obtaining a correct sight picture.

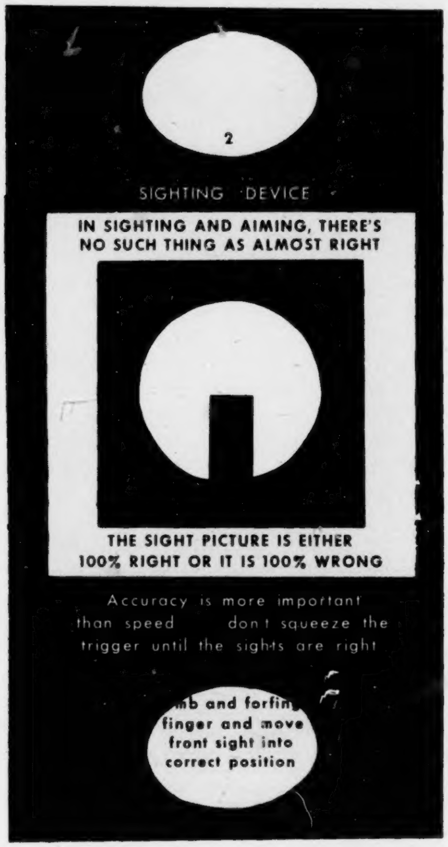

2
SIGHTING DEVICE
IN SIGHTING AND AIMING, THERE'S NO SUCH THING AS ALMOST RIGHT
THE SIGHT PICTURE IS EITHER 100% RIGHT OR IT IS 100% WRONG
Accuracy is more important than speed don't squeeze the trigger until the sights are right
mb and forfin finger and move front sight into correct position

Figure 3-4.—M15 sight device.

b. Second Aiming Exercise. The aiming bar (see fig. 3-5) is designed to teach alignment and placement of the aiming point. Continual checks are made by the instructors to insure the shooters apply the correct principles of sight alignment and placement of the aiming point. This exercise is conducted as follows:

(1) The shooter moves the sights on the aiming bar until he considers the sight alignment to be correct. The instructor checks the result. If the alignment is incorrect, the instructor determines the error and makes the necessary corrections. If the alignment is correct, the instructor moves the sights to cause a misalignment and returns the aiming bar to the shooter. The shooter must then correct the misalignment. This exercise is continued until the principles of correct sight alignment are clearly understood.

(2) In the second step of the exercise the small metal target is placed on the aiming bar, and the shooter is required to complete the sight picture by placing the aiming point in correct relation to the sight alignment. The work of the shooter is continually checked by the instructor.

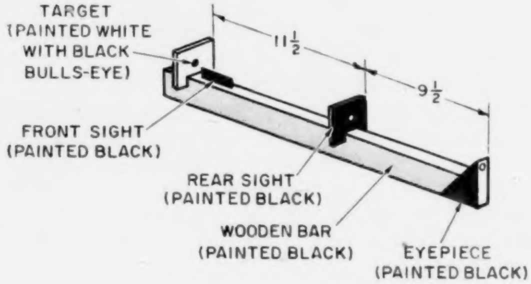

TARGET (PAINTED WHITE WITH BLACK BULLS-EYE)
11 1/2
9 1/2
FRONT SIGHT (PAINTED BLACK)
REAR SIGHT (PAINTED BLACK)
WOODEN BAR (PAINTED BLACK)
EYEPIECE (PAINTED BLACK)

Figure 3-5.—Aiming bar.

c. Third Aiming Exercise. To conduct this exercise a rifle, a rifle rest, a target box, and a target disk are required. (See fig. 3-6.) The rear sight is set at 12 clicks of elevation and mechanical zero windage, and the rifle is braced in the rest. The shooter assumes a position beside the rifle so his eye is positioned as close as possible to the rear sight without touching the rifle. He places both elbows on the ground and rests his chin on the palm of his left hand. The instructor sits on the target box located 15 yards from the shooter. The instructor holds the target disk until the correct sight picture is obtained. He then gives the command, MARK. The instructor records the sight picture by marking the paper with his pencil through the hole in the disk. This procedure is repeated until three sight pictures, called a shot group, have been recorded. The shooter must keep his eye in the same position with relation to the sight aperture for each exercise. A good shot group can be covered by the unsharpened end of a pencil. CAUTION: To obtain valid results, there must be no movement of the rifle, the rifle rest, or the target box until all three sight pictures have been recorded. If any of these items move before the three sight pictures have been recorded, the shooter must repeat the entire exercise. See figure 3-7 for effects of errors in aiming.

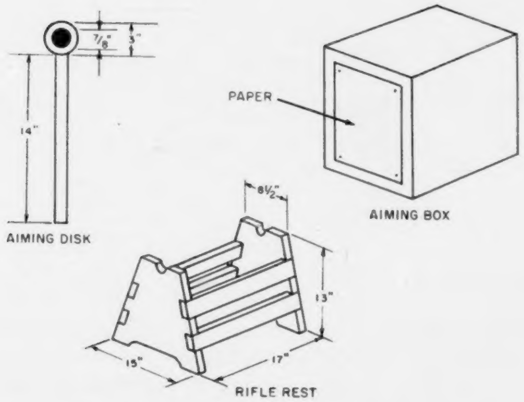


Figure 3-6.—Rifle rest, aiming box and disk.

SECTION III
POSITIONS

3301. General

A correct shooting position is essential to obtain the best results in rifle shooting. The better the position, the easier it is to hold the rifle and control the trigger while the sights are properly aligned. Instruction in sling adjustments should precede instruction in positions since the sling is an important aid to the shooter in the steady holding of the rifle in all positions.

3302. Rifle Slings

a. Purpose. The rifle sling has a twofold purpose. First, when adjusted properly, it will provide maximum stability and will instill confidence in the shooter. Second, when used properly, it helps reduce the effects of the recoil.

b. Adjustment of the Web Sling.

(1) Parade Sling. To adjust the web sling on the rifle for the parade position, the keeper is unfastened. Pull the feed end of the strap down through the keeper toward the butt plate until the sling is tight. Move the keeper down near the tip of the feed end of the strip and secure.

(2) Hasty Sling. To adjust the web sling on the rifle for the hasty position, the keeper is unfastened and moved to approximately six inches from the stock ferrule swivel. The strap is then loosened through the keeper until the proper adjustment is acquired. The sling is given a half left twist prior to placing on the arm.

(3) Loop Sling. To adjust the loop sling, place the butt of the rifle on the right hip and cradle the rifle in the crook of the right arm. This leaves both hands free to adjust the sling. Unhook the sling from the lower sling swivel; then with the buckle down on the hook, feed the sling through the top of the buckle forming a loop. Give the loop a half turn to the left and insert the left arm through the loop, positioning it well up on the arm above the biceps. Tighten the loop while positioning the buckle on the outside of the arm. As tension is applied to the sling,

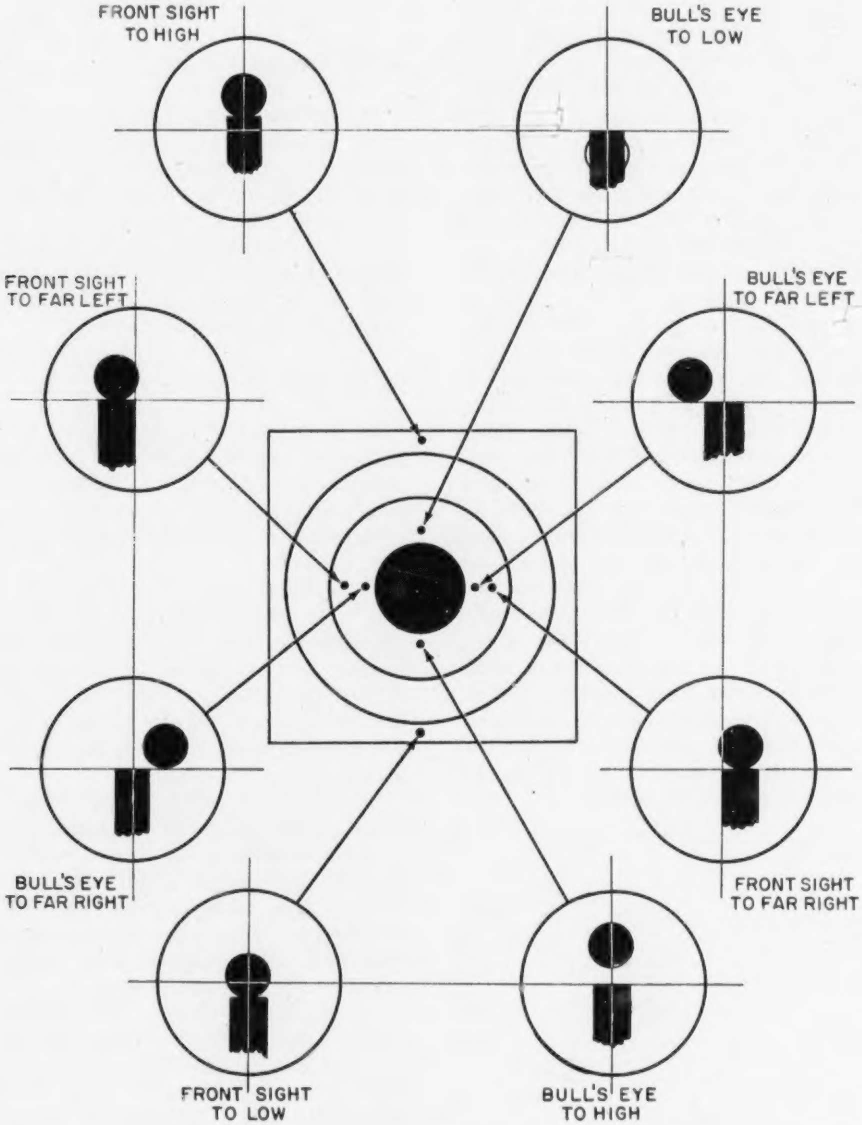


Figure 3-7.—Effects of errors in aiming.

the loop will tighten. To adjust the sling properly, loosen the keeper and pull the feed end down toward the loop until the proper adjustment is obtained. This adjustment varies with each individual and position. Move the keeper toward the left arm and tighten it. Place the left hand over the sling and under the rifle, move it forward to the upper sling swivel so that the rifle rests in the "V" formed by the thumb and forefinger.

3303. Elements of a Good Shooting Position

The three elements of a good position are bone support, muscular relaxation, and natural point of aim on a target.

a. Bone Support. Positions are designed as foundations for the rifle. It should be stressed that a good foundation for the rifle is just as important for good shooting as a good foundation is for a house. If a house is built on a weak foundation, it will not stand erect. The same is true when a shooter establishes a weak foundation (position) for the rifle. It will not withstand the repeated recoil of the rifle in a string of rapid fire. See figure 3-8 for the correct and incorrect position of the left elbow (right handed shooter) in relation to the rifle.

b. Muscular Relaxation. The shooter must learn to relax as much as possible in the various firing positions. Undue strain or tension causes trembling which is transmitted to the rifle. However, in all positions a certain amount of controlled muscular tension is needed. For instance, in a rapid fire position, there should be pressure on the spot weld. Only through practice and achieving a natural point of aim will the shooter learn muscular relaxation.

c. Natural Point of Aim. Since the rifle becomes an extension of the body, it is necessary to adjust the position until the rifle points naturally at the target. When the shooter takes his position, he should close his eyes, relax, and then open his eyes. With proper sight alignment, the position of the front sight will indicate the natural point of aim. By moving his feet or body, the shooter can shift the natural point of aim to the desired aiming point.

3304. Shooting Positions

a. General. The four basic shooting positions used are prone, sitting, kneeling, and standing. These positions are governed by certain rules concerning uniformity which are sufficiently flexible to allow modifications according to the body conformation. Some shooters will have more difficulty in assuming a particular position than will others. So long as the rifleman applies the fundamentals of maximum support for his rifle and relaxation, he should be permitted to adjust the position to fit his own body conformation. Throughout position training, the shooter should be continually checked on the proper application of positioning principles. This check is the responsibility of the instructor who must closely observe the shooter's actions during all phases of fundamental training.

b. Factors Common to All Positions. There are seven factors which affect holding the rifle steady while aligning the sights and firing the rifle. These factors are the same for all firing positions; however, the precise manner in which they apply differs slightly with the various positions.

(1) Left Hand. The left hand is forward with the web against the stock ferrule swivel. The wrist is straight and locked so that the rifle rests across the heel of the hand. The hand itself is relaxed. The fingers can be curled against, but not gripping the stock. The left wrist should be as straight as possible. The left elbow should be directly under the rifle, or as close to this position as the conformation of the shooter's body will permit. With the left elbow directly under the rifle, the bones (rather than the muscles) of the arm support the rifle's weight. The farther away from this position that the elbow is located, the greater will be the muscular effort necessary to support the rifle. The resulting tensed muscles cause trembling and a corresponding movement of the rifle. However, shooters must avoid excessive muscular strain in positioning the elbow as this will cause trembling. Consequently, inexperienced shooters, of necessity, undergo a trial and error period until they find the position best suited to them.

(2) Rifle Butt in the Pocket of the Shoulder. The shooter must place the rifle butt firmly into the pocket formed in the right shoulder. The proper placement of the butt lessens the effect of recoil, helps steady the rifle, and prevents the rifle butt from slipping on the shoulder during firing.

(3) Grip of the Right Hand. The right hand grips the small of the stock firmly, but not rigidly. A firm rearward pressure must

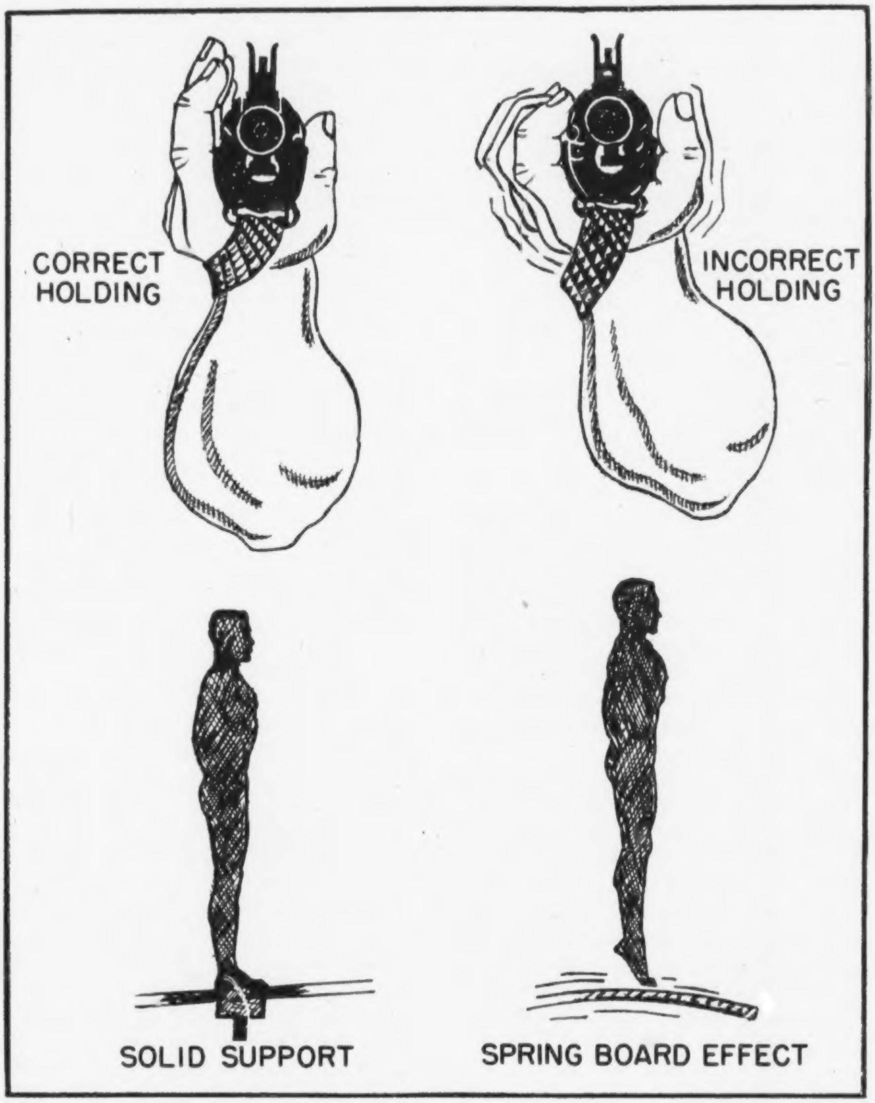


Figure 3-8.—Bone support.

be exerted by the right hand to keep the rifle butt in its proper position in the pocket of the shoulder, and to keep the butt secure enough against the shoulder to reduce effects of recoil. The thumb extends over the small of the stock in order to enable the shooter to obtain a spot weld. The trigger finger should be positioned on the trigger so there is no contact between the finger and the side of the stock. (See fig. 3-9.) This permits the trigger to be moved straight to the rear without disturbing the sights.

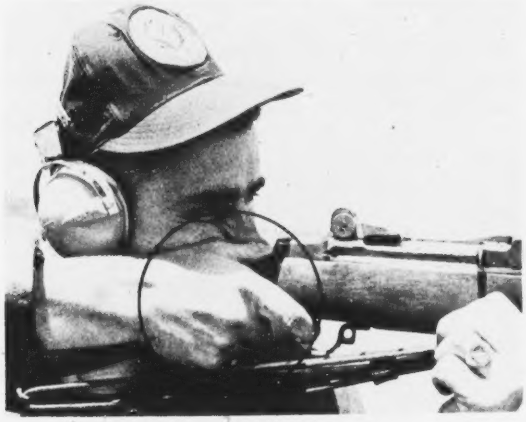


Figure 3-9.—Grip of the right hand.

(4) Right Elbow. The placement of the right elbow provides balance to the shooter's position. Correctly positioned, the elbow helps form a pocket in the shoulder for the right butt. The exact location of the right elbow varies with each shooting position and will be covered in each position description.

(5) Spot Weld. The spot weld is the point of firm contact between the rifleman's cheek and thumb on the small of the stock. (See fig. 3-10.) It is obtained by lowering the cheek to the thumb, which is curled over the small of the stock, and rolling up a pad of flesh against the cheekbone to act as a buffer. The firm contact between the head, hand, and rifle enables the head and weapon to recoil as one unit, thereby facilitating rapid recovery between rounds. The spot weld also enables the eye to be positioned the same distance behind the rear sight aperture each time the rifle is aimed and fired (eye relief). This causes the diameter to the rear sight aperture to appear the same each time a sight picture is obtained and assists in maintaining correct sight alignment. If the shooter is unable to obtain a spot weld, he should use a stock weld by placing his cheek directly against the stock. The stock weld, if properly used, will achieve the same results as will the spot weld.

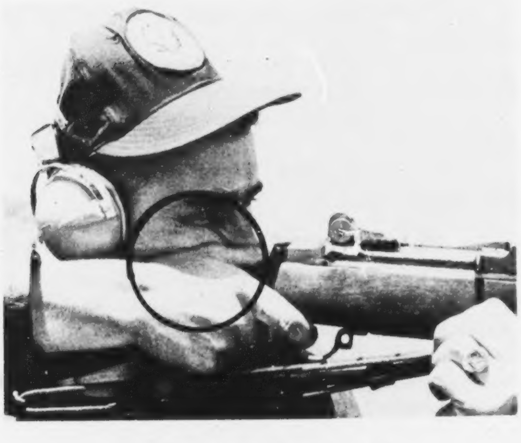


Figure 3-10.—Spot weld.

(6) Breathing. If the shooter continues normal breathing while aiming and firing the rifle, the movement of his chest will cause a corresponding movement of the rifle. To avoid this, the shooter must learn to hold his breath for the few seconds required to aim and fire the rifle. Initially, he takes a normal breath, releases part of it, and holds the remainder in his lungs. He should not hold his breath for more than approximately 10 seconds or his vision may begin to blur. Also, lung strain could cause muscular tension.

(7) Relaxation. The shooter must be able to relax properly in each firing position. Undue muscular strain or tension causes trembling in parts of the body, which in turn causes a corresponding movement of the rifle. If he finds that a particular position causes excessive strain, he should adjust that position slightly until he is able to relax, providing he does not violate any of the other fundamentals. An indication of a properly relaxed firing position is the shooter's ability to relax and still maintain his sight picture.

c. Prone Positions. The prone positions are relatively steady positions which are easy to assume. The positions present a low silhouette and are easily adapted to the use of cover and support. Although the prone position is used in both slow and rapid fire, there are basic differences between them in the methods of using the position. In rapid fire the position must be very tight to prevent recoil from disturbing the natural point of aim. In slow fire the position is much more relaxed and the body is lower. In this position it is not necessary to consider recoil since there is time to recover the correct position between shots. Lowering the body may be done by readjusting the sling. (See figs. 3-11 and 3-12.)

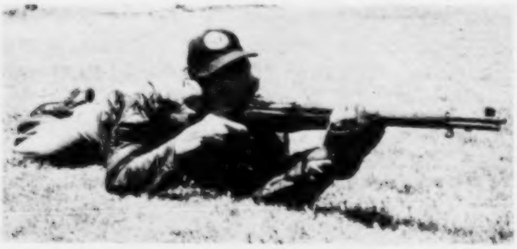


Figure 3-11.—High prone position.

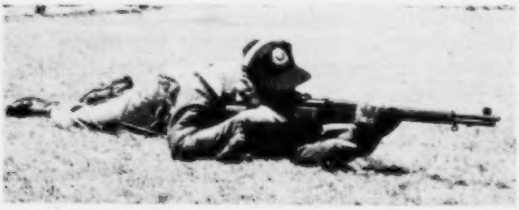


Figure 3-12.—Low prone position.

(1) Assuming the Position. To assume the prone position, the individual stands facing the target with the left hand forward against the upper sling swivel and the right hand grasping the stock at the heel of the butt. His feet are spread to a comfortable distance apart, his weight is shifted slightly to the rear, and he drops to his knees. An imaginary line is drawn from his right knee to the target. The toe of the right foot is placed well forward on the imaginary line. The individual pivots on the rifle down on his left side placing his left elbow again well forward on the imaginary line. With his right hand at the rear of the stock, he forces the butt of the rifle into his right shoulder. The small of the stock is grasped with the right hand and right elbow is lowered to the ground so that the shoulders are approximately level. The right knee is brought up and the right foot pushed out to the right past the imaginary line. The individual then secures a spot weld and relaxes into the tension of the sling.

(2) Breathing Position Check. To adjust the natural point of aim to the target, use the left elbow as the pivot point and move the body either right, left, forward, or rearward until the sights are aligned on the target. If, when breathing, the sights move from 6 o'clock to 12 o'clock on the target, it is a well-balanced position. (See fig. 3-13.)

(3) Position Checks. The checks which the instructor or shooter should observe are as follows:

(a) Rifle vertical (sights level).

(b) Left hand forward against the upper sling swivel.

(c) Rifle resting in "V" formed by the thumb and forefinger of the left hand, and the weight supported by the heel of the hand and not the fingers.

(d) Left elbow well under the receiver (as far as body conformation permits).

(e) Sling high on left arm.

(f) Rifle butt close to the neck in the hollow of the shoulder.

(g) Shoulders approximately level to prevent canting of the rifle.

(h) Body well behind the rifle to absorb the recoil.

(i) Face firmly fixed on the thumb and stock (spot weld).

(j) Daylight between trigger finger and stock.

(k) Trigger finger applying pressure straight to the rear.

d. Sitting Position. There are three variations of the sitting position which are equally satisfactory; the open leg, crossed leg, and the crossed ankle positions. The position used depends entirely on the shooter. Because of different body conformations, there are individuals who are unable to use the crossed leg or the crossed ankle position; however, these two positions are used by the majority. The individual should try

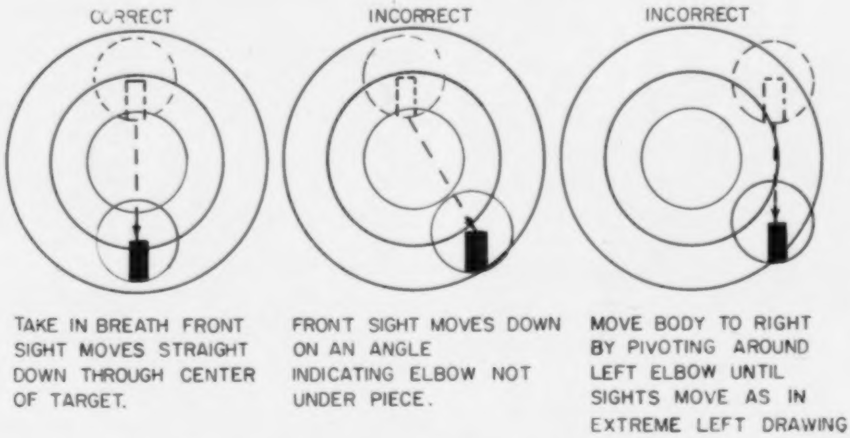

CORRECT
INCORRECT
INCORRECT
TAKE IN BREATH FRONT SIGHT MOVES STRAIGHT DOWN THROUGH CENTER OF TARGET.
FRONT SIGHT MOVES DOWN ON AN ANGLE INDICATING ELBOW NOT UNDER PIECE.
MOVE BODY TO RIGHT BY PIVOTING AROUND LEFT ELBOW UNTIL SIGHTS MOVE AS IN EXTREME LEFT DRAWING

Figure 3-13.—The breathing position check.

all positions and choose the one which affords the most stability, comfort and ease of sight alignment. In rapid fire, as with the prone position, the sling must be tight so the recoil will not disturb the natural point of aim.

(1) Open Leg. To assume the open leg position, the sling must be shortened about two or three inches from the prone position adjustment. The shooter faces the target and does a half right face. He then crosses the left foot over the right foot and sits down in place. He then uncrosses his feet and places them a comfortable distance in front of him (about three feet apart). By bending forward at the waist, the shooter puts his left upper arm down along the left shin bone. Using the right hand at the butt of the rifle, he pushes the rifle forward, places the butt of the rifle into the right shoulder, moves the right hand forward, grasps the small of the stock, and then lowers the upper arm until it rests inside the right knee. By pointing his toes inward, the shooter prevents his knee from spreading, therefore maintaining pressure on the right upper arm. The position is completed by relaxing the weight forward and assuming the correct spot weld. (See fig. 3-14.)

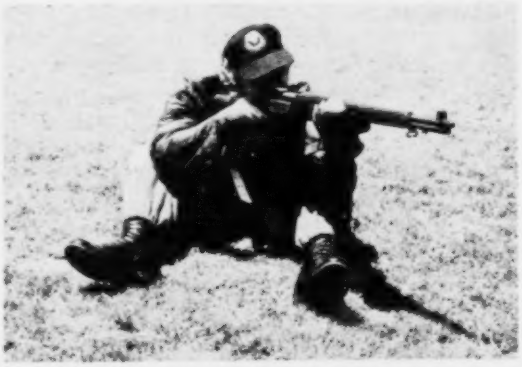


Figure 3-14.—Open leg sitting position.

(2) Crossed Leg. The difference between the crossed leg and the crossed ankle positions is very slight. In the crossed leg position, after sitting down, the shooter leaves his feet in place and positions his upper arms inside his knees. One of the reasons many shooters used the crossed leg position is that it takes only a short period of time in which to assume this position. (See fig. 3-15.)

(3) Crossed Ankle. In this position the shooter sits down, keeps his feet crossed, and slides them forward. He then bends at the waist and places his arms as in the open

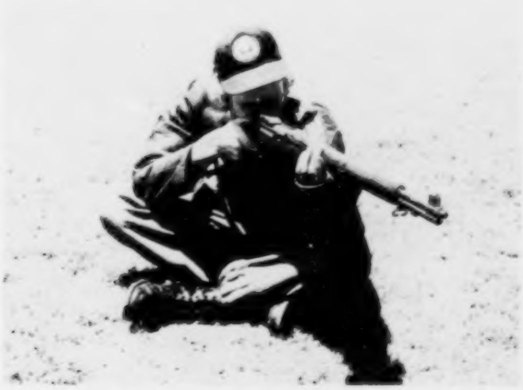


Figure 3-15.—The crossed leg sitting position.

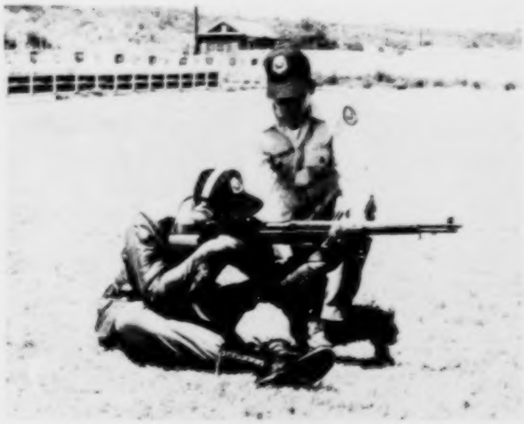


Figure 3-16.—The crossed ankle sitting position.

leg position. In the three sitting positions, as in the other positions, it is mandatory to adjust the natural point of aim to the target to eliminate using muscles, either foot, both feet, or the buttocks until the sights are naturally aligned on the target with no muscular tension. (See fig. 3-16.)

(4) Position Checks. There are certain checks that should be made to ensure that the positions adhere to the fundamentals:

(a) Rifle vertical (sights level).

(b) Rifle resting in the "V" formed by the thumb and forefinger and supported by the heel of the left hand, fingers relaxed.

(c) Left hand forward against upper sling swivel (if possible).

(d) Left elbow approximately under the receiver.

(e) Right upper arm blocked inside of the right knee.

(f) Sling high on left arm.

(g) Shoulders approximately level to prevent canting of the rifle.

(h) Butt of rifle close to neck and positioned in the hollow of the shoulder.

(i) Face firmly fixed on thumb or stock (spot weld).

(j) Daylight between trigger finger and stock.

(k) Less distance between trigger finger and the heels (open leg position).

(l) Trigger finger applying pressure straight to the rear.

e. Kneeling Position. As with the sitting position, there are two variations of the kneeling position; the low position (see fig. 3-17), and the high position (see fig. 3-18). Because of different body conformations, the position used should depend entirely on the shooter.

(1) Assuming the Position.

(a) Position of the Right Leg. There are two (2) different and acceptable kneeling positions. Each position is different and gives the body a different height. Low position: the ankle is turned in and with the buttocks in contact with the side of the foot. High position: the ankle is straight and the toe of the shoe is in contact with the ground and is curled by the body weight as the shooter kneels. When the right foot of the shooter has been placed in the desired position, the right portion of the buttocks is placed on the right heel making a solid contact. When sitting on the side of the foot, the right buttock is placed on the inside of the right ankle. However, when using either position, care should be taken that the buttocks are not placed too far to the rear resulting in an unbalanced position.

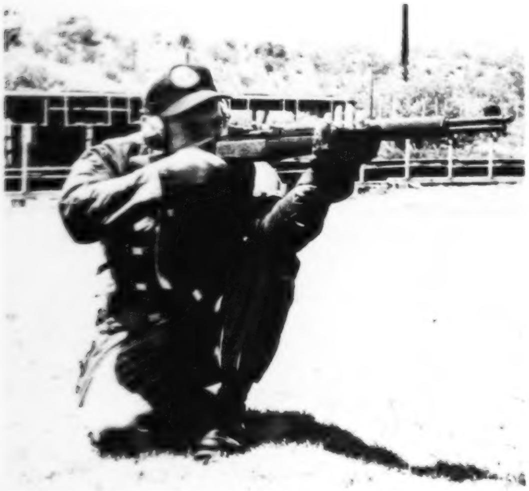


Figure 3-17.—Low kneeling position.

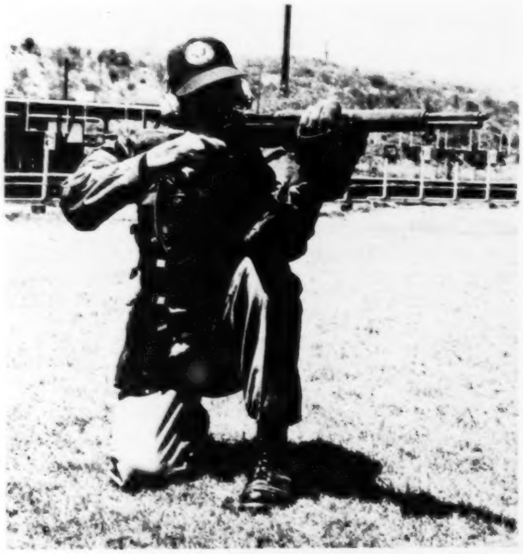


Figure 3-18.—High kneeling position.

(b) Position of the Left Foot. The left foot is extended toward the target with the foot flat on the deck. A level spot is needed for effective results. For maximum support, the toes should be pointed as far to the right as comfortable. When in position, the left foot may be pushed forward or pulled back slightly to raise or lower the muzzle, if required.

(c) Position of the Arms. The right elbow is normally held shoulder high to ensure a pocket for the butt of the rifle. The elbow may be lower if a pocket can be formed without the rifle butt slipping out of the shoulder. The left arm supports the rifle so it is important to know the positions of the various parts of the arm. On the upper left arm a flat surface can be felt, just behind the elbow. This portion of the left arm must be placed in a similar spot found on the right side of the left knee in order to receive maximum support. Placing the flat surfaces of the arm and knee together results in the elbow being forward of the knee, and also allows the weight of the body to be transferred forward to the left leg. The left leg must be placed under the rifle to receive maximum support. Daylight is seen between the sling and the crook of the left elbow which assures the shooter that the sling is supporting the forearm with the upper arm. The sling supports the bones and in turn the bones support the rifle resulting in a steady position. Approximately 60 percent of the weight of the body is transmitted forward to the left leg reducing the tension on the right foot and leg, and provides a more relaxed position. A tripod is formed with the left foot, right knee, and right foot.

(2) Position Checks. Checks that should be made to ensure that the positions adhere to the fundamentals are as follows:

(a) Rifle vertical (sights level).

(b) Rifle resting in the "V" formed by the thumb and forefinger, fingers relaxed.

(c) Left hand forward to sling swivel (if possible).

(d) Left leg approximately vertical from frontal view.

(e) High position of the right elbow.

(f) Weight of the body forward on left leg.

(g) Face fixed firmly on thumb and stock (spot weld).

(h) Daylight between trigger finger and stock.

(i) Trigger finger applying pressure straight to the rear.

(j) Sling high on the arm.

(k) Daylight between the sling and crook of the left elbow.

f. Standing Position. Body balance is as important to a rifleman as it is to an athlete. This is especially true for the standing position, when he must be able to stand for long periods without tiring. Compared to the prone, sitting, and kneeling positions, there is little doubt that it is the least steady position, and the most difficult to master. However, there is no reason why excellent results cannot be obtained by applying the fundamentals.

(1) Assuming the Position. In the standing position the shooter faces his target, executes a right face, and spreads his feet a comfortable distance apart. With his right hand at the small of the stock, he places the rifle butt against his shoulder so that the sights are level with his eyes. He holds his right elbow to form a pocket in his right shoulder. This also permits him to exert a strong upward and rearward pressure with his right arm and hand. He holds most of the rifle weight with his right arm and places his left hand under the rifle in a position to support and steady the rifle. He distributes his weight evenly on both feet. (See fig. 3-19.) The spot weld for standing is very seldom the same as for sitting, kneeling, or prone. In the standing position, it is difficult for many shooters to place the cheek against the right thumb. To maintain consistent eye relief, care must be taken to place the cheek against the stock the same way, and at the same place, each time. Each individual can, by practice and experimentation, determine the feel of his proper spot weld. Finding a natural point of aim in the standing position is complicated because of the uneven terrain on most firing lines. The shooter should always strive to have both feet level, but he can move either foot in any direction to take advantage of "hills" and "valleys" until he has his desired point of aim. If at any time the shooter loses his natural point of aim, he must re-adjust prior to firing the next shot. The shooter may relax between shots but he must always keep his feet in place.

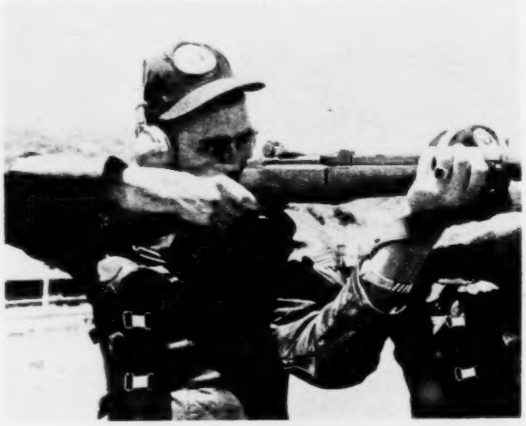


Figure 3-19.—The standing position.

(2) Shooting in Wind. Some mention must be made concerning the technique of shooting in the wind while in the standing position. The entire body and rifle are exposed to the wind. Wind velocity and direction changes will cause considerable rifle movement. It is possible to get good results even with these unfavorable conditions if the shooter has a good mental attitude. Intensive training is the most effective method for developing a proper attitude. The shooter must be able to assume his position and wait for a lull, or at least a period when the wind direction and velocity are constant. While waiting, he allows his body to move freely with the wind. When the lull occurs, he quickly acquires the correct sight picture and fires. Although his movement may be greater than usual, he must still fire a relatively well-aimed shot. Unsatisfactory results are usually caused by the temptation to "snap shoot" when the front sight is in the vicinity of the target center. Snap shooting will almost invariably result in a jerk, which causes poor results.

(3) Position Checks. The points to be checked and ascertained correct are as follows:

(a) Feet level and comfortably spread apart.

(b) Weight equally distributed on both feet and hips.

(c) Butt of rifle high in shoulder close to neck.

(d) Natural point of aim on the target.

(e) Consistent spot weld.

(f) Neck and torso relaxed.

(g) Daylight between trigger finger and stock.

SECTION IV
TRIGGER CONTROL

3401. General

Trigger control is the manipulation of the trigger and firing, without disturbing the alignment of the sights and with respect to the target.

3402. Application of Trigger Control

a. Finger Placement on the Trigger. The trigger finger should contact the trigger at some point between the tip and second joint of the finger. The placing of the trigger finger on the trigger is an individual preference and depends greatly on the size of the shooters' hand and the manner in which he grips the stock of the weapon.

b. Phases of Trigger Movement. The movement of the trigger to the rear is broken down into two phases:

(1) Trigger Slack. Trigger slack is that initial movement of the trigger which is relatively free of resistance. When the slack is taken up on the trigger, there is a more definite resistance encountered which is the beginning of the trigger weight.

(2) Trigger Weight. The trigger weight (usually between four and one-half to seven and one-half pounds) determines the amount of trigger pressure the shooter must apply without disturbing sight alignment.

c. Technique of Trigger Control. During the firing process the slack should be taken up quickly and a gradual increase as long as the sight alignment and sight picture remain good. Trigger control is very important since the sight picture cannot be held in alignment continuously. The shooter must be able to stop pressure on the trigger when the sight picture is not good. The shooter will apply pressure to a point when he will know that only a small additional pressure on the trigger will cause the hammer to fall. He then applies this small additional pressure when the sights are aligned without causing movement in the weapon.

3403. Factors Affecting Trigger Control

a. General. The upper part of the trigger finger should be kept clear of the stock to allow a "front-to-rear" movement in the manipulation of the trigger. The finger touching the side of the stock will cause pressure to be applied at a slight angle rather than straight to the rear. Such a side pressure, no matter how slight, will tend to pull the sights off the target. A firm grip with the hand on the rifle stock is essential for good trigger control. The hand must be anchored in order for the trigger finger and trigger to move instead of the hand when the trigger weight is encountered. This firm grip should be maintained by the three fingers and thumb of the hand holding the weapon's stock. If the shooter has a loose grip when applying pressure on the trigger with the finger, the loose hand must anchor itself by tightening its grip on the stock before enough finger pressure can be exerted to move the trigger. Therefore, a shooter thinks he is pressing the trigger, when, in reality, all he is doing is squeezing the stock. This, in turn, leads to a combination of errors.

b. Common Errors. Trigger control is the most difficult marksmanship skill for the inexperienced shooter to master. The majority of shooting errors stem directly or indirectly from the improper application of this technique. The following are some of the more common errors:

(1) The Flinch. The flinch is the shooter's reaction to the anticipated recoil of the exploding round. It is indicated by the shooter moving his head, closing his eyes, tensing his left arm, moving his shoulder to the rear, or a combination of these.

(2) The Buck. The buck is an attempt by the shooter to take up the recoil, just

before the weapon fires, by tensing his shoulder muscles and moving his shoulder forward.

(3) The Jerk. The jerk is an attempt by the shooter to make the rifle fire at a certain time by rapidly applying pressure on the trigger and disturbing the alignment of the sights with respect to the target.

3404. Follow Through

Follow through is the continued application of the fundamentals after each round has been fired. That is, the shooter does not shift his position, move his head, or let the muzzle of the rifle drop until a few moments after the rifle has been fired. This procedure will ensure that there is no undue movement of the rifle until after the round is fired and from a training viewpoint, can assist the shooter to correct his own errors. By knowing his sight picture the instant the round is fired, the shooter can analyze his shot group in relation to his sight picture and correct himself accordingly. In combat, follow through allows the individual to observe the strike of his bullet in relation to his aiming point, enabling him, if necessary, to adjust his aiming point and fire a second round.

3405. Calling the Shot

In calling the shot, the shooter predicts where the shot will hit on the target. This is done both while snapping-in and firing on the range. The shooter calls the shot by noting where on the target the sights were when the round went off. If he is not calling the shot (i.e., the shot very seldom hits the target where the shooter called it), he may be jerking the trigger or doing something else wrong. This helps both the shooter and the instructor to correct mistakes. If it is determined that the shooter is controlling the trigger and performing all the other fundamentals correctly, and still is not calling the shots, a sight change may be necessary. Calling the shot can help both the shooter and the instructor find out if the elevation and/or windage is correct.

SECTION V
RAPID FIRE

3501. General

There is no basic difference between rapid and slow fire. Accuracy in both requires each shot to be properly aimed, position, and trigger control. Rapid fire is nothing more than a series of slow fire shots fired with a shorter time interval between shots. Time is saved and speed is gained by blending the elements of good position, sighting and aiming, trigger control, controlled breathing, and reloading into a smooth coordinated rhythm or cadence.

3502. Rapid Fire Exercises

The teaching of rapid fire can be accomplished by using three rapid fire exercises: The one shot exercise, reloading exercise, and the ten shot exercise. These exercises are best taught utilizing the instructor-pupil method during dry or live firing practice.

a. One Shot Exercise. In the one shot exercise the shooter must be able to assume a position rapidly and fire the first shot. The shooter first assumes his regular position and adjusts his natural point of aim to the target. The shooter then rises and on command; retakes his position rapidly, readjusts his natural point of aim, if necessary, and applies the correct trigger control to fire the shot within the specified time limit (generally, 11 seconds for sitting and 12 seconds for prone).

b. Reloading Exercises. Reloading with the service rifle is time consuming; however, with practice it can be accomplished smoothly and with a minimum of wasted time and motion. It must be remembered that the loaded clip should always be placed in the web belt, bullets down. When the shooter completes firing the first 2 rounds, he drops the butt of the rifle to the ground. Reaching to the rear, he removes the loaded clip from the belt and inserts the clip in the weapon. (See fig. 3-20.)

c. Ten Shot Exercise. In the ten shot exercise, the shooter is required to quickly

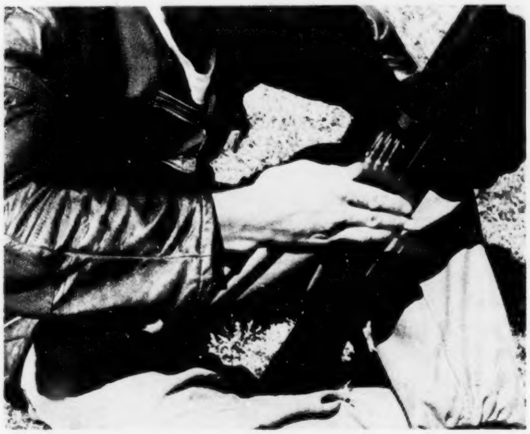


Figure 3-20.—Reloading the service rifle in the sitting position with an 8-round clip.

assume a good position, and apply the proper trigger control in firing the initial two rounds. He is then required to reload quickly, reassume his position, aim, and apply the proper trigger control in firing the remaining rounds within the specified time limit. The dry firing of this exercise will be more beneficial if the man acting as the instructor strikes the operating rod handle to the rear following each shot to cock the rifle to stimulate recoil. Dummy rounds should be used if they are available. In both dry and live firing, it is important for the shooter to establish a definite cadence of firing 10 rounds in regular, short intervals within a specified time limit.

SECTION VI
SIGHT ADJUSTMENT

3601. General

Following training in fundamentals, the shooter must zero his service rifle. To accomplish this he must first learn the operation of the rear sight, the use of the elevation and windage rules, and how to compute sight changes.

3602. Rear Sight

The rear sight (see fig. 3-21) of the service rifle has an elevation knob and a windage knob which are used to move the rear aperture up or down and right or left respectively. Changing the position of the rear sight aperture causes a corresponding change in the location of the strike of the bullet. The elevation knob affects the vertical location of the strike of the bullet, while the windage knob affects the horizontal location. Both knobs make an audible click when they are turned. Each click changes the strike of the bullet a specific distance, depending on the range to the target. When the elevation knob is set on zero elevation run all the way down, and the index line on the rear sight movable base is aligned with the center index line on the receiver, the rifle is set at mechanical zero.

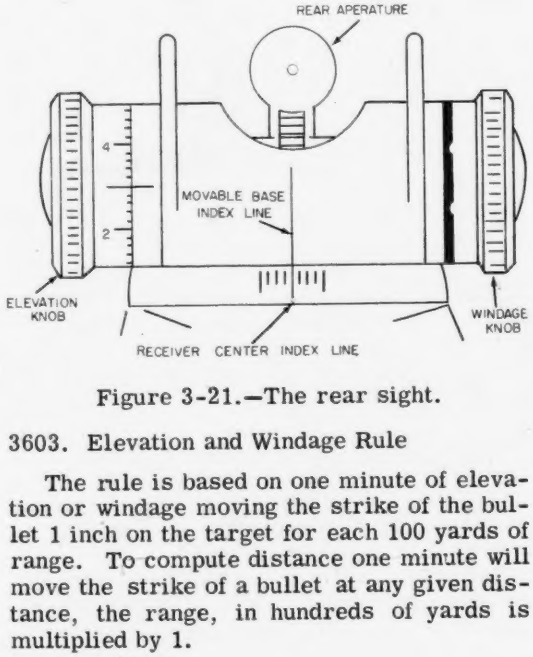


Figure 3-21.—The rear sight.

3603. Elevation and Windage Rule

The rule is based on one minute of elevation or windage moving the strike of the bullet 1 inch on the target for each 100 yards of range. To compute distance one minute will move the strike of a bullet at any given distance, the range, in hundreds of yards is multiplied by 1.

3604. Sight Changes

To make sight changes the shooter first locates the center of his shot group and then determines the distance between it and the desired location. The distance in elevation is determined horizontally. These distances are converted to minutes by using the elevation and windage rule. As a general rule, bold adjustments will prove more advantageous to the shooter. For example, if the shooter cannot decide whether to move two or three minutes he should normally make the adjustment requiring the greater number of minutes. To raise the strike of the bullet the shooter must increase the number of minutes of elevation. Conversely, he must decrease the elevation to lower the strike of the bullet on the target. Right windage moves the strike of the bullet to the right, and left windage moves it to the left.

SECTION VII
EFFECTS OF THE WEATHER

3701. General

In the case of a highly trained rifleman, effects of the weather are a primary cause of error in the strike of the bullet. The wind, light, temperature, and humidity all have some effect on the bullet, the shooter, or both. Some of these effects such as temperature and humidity are relatively insignificant since most shooting is done under average conditions. However, shooting is sometimes done under extremes of weather so their effects must be explained along with the effects of wind and light.

3702. Effects of Wind

a. General. The condition which constantly presents the greatest problem to the shooter is the wind. Wind has a considerable effect on the bullet and it increases with the range. This is due primarily to increased resistance of the air as the velocity is reduced and the resultant loss of stability. Wind also has a considerable effect on the shooter, particularly in the standing position. The stronger the wind, the more difficulty he has in holding the rifle steady. The effect can be partially offset with good training and conditioning.

b. Classification of Winds. Winds are classified according to the direction from which they are blowing in relation to the direction of fire. The "clock system" (see fig. 3-22) is used to indicate this direction. A wind blowing from right to left directly across the shooter's front is called a "3 o'clock wind." A wind blowing toward the shooter from his front is called a "12 o'clock wind." The direction from which the wind is blowing also denotes the value of the wind. Winds from either flank are "full value winds," those from the oblique are "half full winds," and winds blowing from either the front or rear are "no value winds." A half value wind will affect the bullet approximately half as much as a full value wind. That is, a 1 o'clock wind having a velocity of 10 miles per hour is equivalent to a 5-mile per hour 3 o'clock wind. For basic firing, the effect of a no value wind on the bullet is negligible and may be discounted.

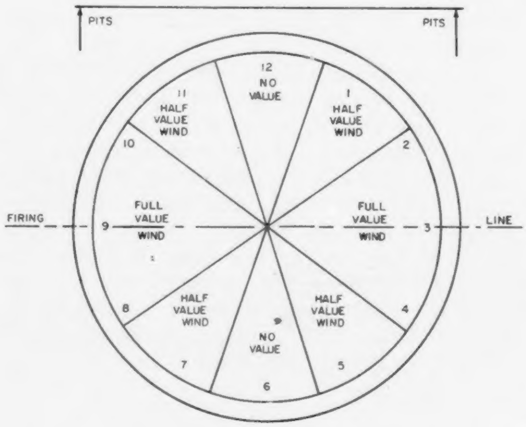


Figure 3-22.—Wind direction by the clock system.

c. Wind Velocity. There are three common field expedient methods of determining wind velocities. Since the situation may limit the use of some methods, individuals must be thoroughly familiar with all techniques.

(1) Flag Method. (See fig. 3-23.) If a shooter can observe a flag (or any clothlike

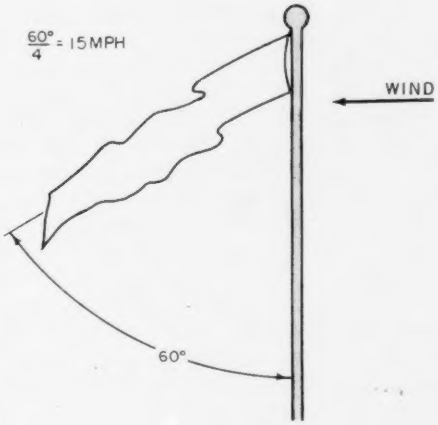


Figure 3-23.—Determining wind velocity by the flag method.

material similar to a flag) hanging from a pole, he should estimate the angle (in degrees) formed at the juncture of the flag and the pole. Dividing this angle by the constant number "4" will give the approximate wind velocity in miles per hour.

(2) Pointing Method. (See fig. 3-24.) If no flag is visible, a piece of paper or other light material may be dropped from the shoulder. By pointing directly at the spot where it lands, the angle (in degrees) can be estimated. This figure is again divided by the number "4" to determine the approximate wind velocity in miles per hour.

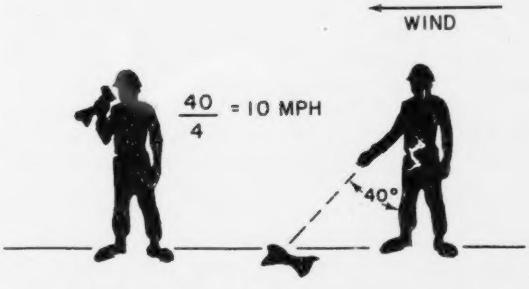


Figure 3-24.—Determining wind velocity by the pointing method.

(3) Observation Method. If the situation prevents the use of the above two methods, shooters can use the following information in determining wind velocities:

(a) Under 3 miles per hour, winds can hardly be felt, but the presence of slight wind can be determined by drifting smoke.

(b) A 3 to 5 mile per hour wind can be felt lightly on the face.

(c) Winds of 5 to 8 miles per hour keep tree leaves in constant motion.

(d) At 8 to 12 miles per hour, winds will raise dust and loose paper.

(e) A 12 to 15 mile per hour wind will cause small trees to sway.

d. Determination of Windage Adjustment. After finding the wind direction and velocity, the windage correction to be placed on the rear sight is determined by the formula R x V/15 = number of minutes of windage to be placed on the rear sight for a full value wind. In this formula, R = range in hundreds of yards, V = velocity in miles per hour, and the number 15 is constant. For half value winds, divide the answer by 2. In placing the computed adjustment on the rear sight, THE REAR SIGHT APERTURE MUST ALWAYS BE MOVED INTO THE WIND. That is for winds blowing from 12:30 through 5:30 o'clock, the rear sight aperture must be moved to the right. Conversely, the rear sight aperture must be moved to the left for winds blowing from 6:30 to 11:30 o'clock. An example of computing a windage adjustment is as follows: A 10-mile per hour wind is blowing from 9 o'clock. The range to the target is 600 yards. Converting this information for use in the wind formula, R = 6 and V = 10. Thus, R x V/15 - 6 x 10/15 = 60/15 = 4 minutes (left windage). To place this adjustment on the sight, the windage knob is turned four minutes to the rear (counterclockwise), moving the rear sight aperture four minutes to the left or into the wind.

3703. Effects of Light

This subject is very controversial as light may or may not have an effect on the shooter's aim. The difficulty is that light affects different people in different ways;

therefore, it is believed that nothing can be presented as an iron-clad fact. The general tendency, however, is for the rifleman to shoot high on a dull, cloudy day, and low on a bright, clear day. This is especially true on a day with intermittent clouds. On a bright day, when the sun is directly on the face of the target, an apparent halo forms around the bull's-eye causing the aim to be low. On a dull day the halo is gone and the tendency is to hold closer to the point of aim, causing the shots to go high. Extreme light conditions from the left or the right may have an effect on the horizontal impact of a shot or shot group. To solve the problem of light and its effects, the individual shooter must accurately record the light conditions under which he is shooting. Through experience and study he will eventually determine the effect of light on his zero.

3704. Humidity and Temperature

a. Desirable Atmospheric Conditions for Zeroing. The most desirable atmospheric conditions for zeroing a rifle are considered to be 70 degrees F. with the air 2/3 saturated with moisture and a barometric pressure of 30 inches of mercury. These conditions are considered the standard from which ballistic charts are computed. Any deviation from these conditions will affect the strike of the bullet to some degree.

b. Humidity. To understand the effect of humidity on the strike of the bullet, one must realize that the higher the humidity (denser air), the more resistance to the flight of the bullet through it. This resistance will tend to slow down the bullet and as a result, the shooter must raise his elevation to compensate for it. The effects of humidity at the short ranges are not as noticeable as at the longer ranges. Again, the experience of the shooter and his resultant study of hits and groups under varied conditions of humidity will determine the effect of humidity on his zero. Much more could be written in reference to the effects of weather on the strike of the bullet. Certain combinations of weather will have different effects on the bullet than others. For this reason, a shooter may fire two successive days on the same range and under what appears to be the same condition and yet utilize two different sight settings. For example, a rise in the humidity of say 30% cannot always be determined readily. This rise in humidity makes the air more dense. If this heavier air is present with a 10 m.p.h. wind, it will require more elevation and more windage to hit the same location than on a day when the humidity was 30% lower.

c. Temperature. Temperature has the opposite effect on the bullet than humidity, inasmuch as higher temperatures of barrel and powder will increase chamber pressure and consequently the muzzle velocity. This increase will cause the bullet to impact higher and requires the lowering of the elevation. Inversely, a drop in the temperature will require the shooter to raise his sights in order to hit the target in the same place. Arsenal tests indicate a variation in velocity of about 1.7 feet per second per degree of temperature, exclusive of the humidity factor.

d. Humidity vs. Temperature. From the preceding two paragraphs, the shooter may deduce rightfully that certain combinations of temperature and humidity will have little or no effect on his zero. For example, high humidity combined with high temperatures may affect the bullet the same as the quoted normal, since the humidity sets up a "drag" while temperature increases velocity and one overcomes the other. In the same manner, low humidity will allow the bullet to pass through the air with little resistance and temperatures slightly below normal will not slow the bullet sufficiently to cause a change in elevation. Other combinations such as high temperature and low humidity or high humidity and low temperature will have an opposite effect.

e. Considering All Effects of Weather. In considering all of the effects of weather, many shooters tend to overemphasize certain effects and this will produce low scores from time to time. Proper recording and study based on experience are all important with respect to determining the effects of weather. Probably one of the most difficult things to impress upon a shooter is the evidence of a probable change in his zero. If a change is indicated, it should be applied at all ranges.

SECTION VIII
ZEROING

3801. Principles of Zeroing

a. Bullet Path and Point of Aim. To understand the principles of zeroing, the shooter should have a basic knowledge of the relationship between the path of the bullet in flight and the line of aim. In flight a bullet does not follow a straight line but travels in a curve or arc which is called its trajectory. (See fig. 3-25.) The maximum height of a bullet's trajectory depends on the range to the target. The greater the distance a bullet travels before impact, the higher it must travel in its trajectory. On the other hand, the line of aim is a straight line from the eye through the rear sight aperture, across the front sight, to the aiming point or target. So it follows that after the bullet leaves the rifle, it is initially moving in an upward path, intersecting the line of aim. As the bullet travels farther, it begins to drop and will eventually again intersect the line of aim. The range at which this intersection occurs is the zero for that sight setting.

b. Definition of Zero. The zero of a rifle is the sight setting in elevation and windage required to place a shot, or the center of a shot group, in the center of the target at a given range when no wind is blowing. Experience has shown that the best way to zero a rifle is to shoot in the position, range, and cadence at which we intend to use it.

3802. Method of Zeroing

a. General. The method of zeroing described in this paragraph will establish an accurate zero providing all shots are recorded in the score book, and provided the information in the score book is used in projecting zero changes. Also, the wind must be taken into consideration in determining windage zero. For example, if the wind velocity required three minutes left of that used in hitting the center of the target.

b. The 200 Yard Line. The initial zeroing phase should start at the 200 yard line with the sights set at 8 minutes elevation and mechanical zero windage. To facilitate determining the 200 yard zero quickly, it is suggested that the rounds be fired slow fire in the sitting position. When the slow fire shots are striking near the center of the target, three 3-round shot groups are fired in rapid fire cadence, followed by a rapid fire string of ten. During this firing, sight changes are made to bring the group into the center of the target. Often the rapid fire zero will be different from the slow fire zero. This is due to a difference in position and trigger control. Therefore, it is necessary to establish a slow fire zero. To do this, simply fire several rounds slow fire

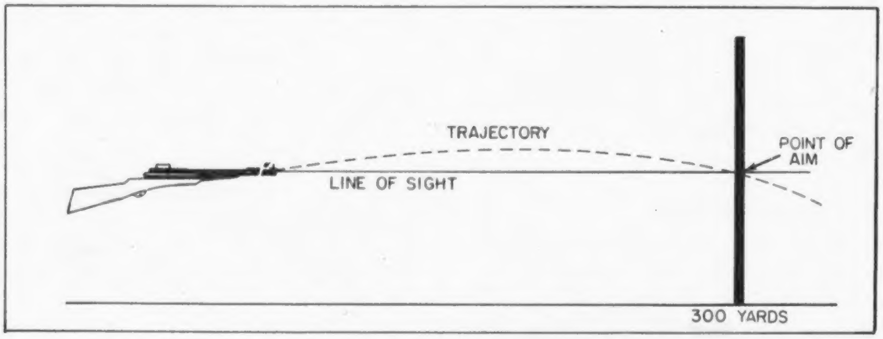


Figure 3-25.—Trajectory of a bullet.

from the appropriate position and call each shot accurately. When the shots appear on the target "on call," then the slow fire zero is obtained.

c. The 300 Yard and 500/600 Yard Lines. The 300 yard slow fire and rapid fire zero is determined by firing the same exercises as were fired at the 200 yard line; while at 500/600 yards single shots are fired until the group is centered in the target. The normal sight change is up three minutes from 200 to 300 yards and up ten minutes from 300 to 500/600 yards.

SECTION IX
THE SCORE BOOK

3901. General

The score book is used to record every shot fired by the shooter. It is also used to record the weather conditions and their effects on the shooter. If used properly, it will provide the necessary information for initial sight settings at each range. It provides a basis for analyzing the performance of the shooter and his rifle, and is a valuable aid in making bold and accurate sight changes. Instruction in the use of the score book must be given prior to firing any rounds in zeroing or practice. This instruction should be integrated with the instruction on effects of weather, since these subjects are interrelated. Although this instruction is not directly concerned with the individual's skill in applying the fundamentals of marksmanship, it is a vital phase of training to the Navy marksman. The most competent rifleman cannot consistently hit the center of the target unless he can analyze his performance; has a record of his performance; or has a record of the conditions that affect his shooting.

3902. Use of the Score Book

a. Slow Fire. The following procedure should be used for filling out and maintaining the score book in SLOW FIRE:

(1) Before Firing. Before firing, the date, hour, rifle number, target number, temperature, wind (word description and direction), light (word description and direction), windage zero, elevation used, and any other appropriate remarks to aid the shooter are entered in the spaces provided or under remarks.

(2) During Firing. A strict sequence of recording data during firing must be followed:

(a) If a wind is blowing, the value is determined and set on the sights and entered in the score book.

(b) After firing each round the call is plotted.

(c) When the target is marked, the location of the hit is plotted with a number and the call is compared to the hit.

(d) The correct sight setting determined from analyzing the group is then recorded.

(e) During a slow fire a good rule to follow is: "SHOOT WHEN TARGET IS UP—RECORD INFORMATION IN THE BOOK DURING TIME TARGET IS DOWN."

(3) After Firing. Upon completion of firing the results should be analyzed and studied very carefully.

b. Rapid Fire. The following procedure should be used for filling out and maintaining the score book in RAPID FIRE:

(1) Before Firing. Before firing, the shooter records the same information as he did for slow fire.

(2) During Firing. In rapid fire the sequence to be followed during firing is different than that of slow fire:

(a) The final windage correction (if needed) is made shortly before the targets appear and this is applied to the sights. While firing a mental note is made of any shots called out of the group.

(b) The calls are plotted immediately after firing. This is done by placing small circles for any erratic shots on the call target.

(c) When the target is marked, all visible hits are plotted with an "X" and compared to the calls.

(d) The correct sight setting determined from analyzing the group is then recorded.

(3) After Firing. Upon completion of firing, the results should be analyzed and studied very carefully.

CHAPTER 4

KNOWN-DISTANCE RANGE FIRING (RIFLE)

SECTION I
GENERAL

4101. Purpose

The known-distance range is an extremely important step in the building of a sound foundation of marksmanship principles. It would be impossible to eliminate this phase of marksmanship training and still expect the training progression to produce a rifleman with the degree of proficiency required. It is during this phase that the rifleman acquires the elementary skills necessary to perform well on any firing range. After thorough instruction in the fundamentals of marksmanship, the student is given the opportunity to apply those principles taught during the preparatory phase, the foundation of sound marksmanship principles is constructed in each Navyman. With the understanding of marksmanship principles and the successful completion of the application phase of those principles, the rifleman is then ready to progress to any phase of marksmanship training which requires accurate, well-aimed fire. (See fig. 4-1.)

4102. Training

Known-distance range firing is nothing more than a practical application of those fundamental skills taught during preparatory marksmanship. It is the opportunity for the individual rifleman to put into practice the integrated act of shooting. Under the guidance of the instructor, the rifleman is taught to understand the elements that effect the hitting or missing of a target by analyzing his own experiences in firing his rifle. On the known-distance range, the rifleman will actually fire at targets up to the maximum effective range of his rifle. During this training he will come to appreciate the various skills that he must master to enable him to deliver accurate fire at a target and will be building confidence within himself. Known-distance range training will be conducted in accordance with current Navy directives as outlined in chapter 8 of this manual.

Figure 4-1.—Correct sight alignment and trigger control hit the mark.

SECTION II
COURSES OF FIRE

4201. General

The types of firing courses set forth in current Navy directives are established to provide a standardized rifle training throughout the Navy and to provide an adequate means of evaluating the capabilities of rifleman. Therefore, in establishing a known-distance range course of fire, there are certain criteria that should be met to be an effective course:

a. Distances. The rifleman should fire at several different ranges up to the maximum effective range of his rifle. This is necessary to teach the shooter the effect of wind on a bullet at various ranges and that he learn how to manipulate the rear sight in moving from one distance to another. It will also instill within the rifleman the confidence and knowledge that he can effectively engage a target at great distances.

b. Positions. The course of fire should require the rifleman to utilize all four of the basic positions taught in the preparatory phase of marksmanship training. All combat or field positions are variations of the prone, sitting, kneeling, and standing or offhand positions.

c. Slow and Rapid Fire. During the conduct of firing, the rifleman should be required to fire both slow and rapid fire stages. The slow fire stages allow both the coach and the rifleman to analyze each round to determine the reason for each hit or miss. It is necessary to learn to deliver one well-aimed shot since rapid fire is nothing more than a sequence of individual well-aimed shots. During rapid fire, the rifleman is required to deliver an accurate volume of fire in a specific time frame. He should also be required to reload his rifle within the string of fire as an additional training feature.

d. Courses. Known-distance firing should consist of both familiarization and qualification firing. Familiarization firing is practice firing with the assistance of an instructor. Qualification firing is done without the assistance of an instructor, and is used to evaluate the rifleman's ability in applying the fundamentals of marksmanship. The requirement of record firing also creates additional pressure or anxiety on the rifleman which he must control to satisfactorily complete the course of fire. As a general rule, familiarization firing is completed before any portion of qualification firing is started. No part of qualification firing should be conducted on the same day as familiarization firing unless scheduling difficulties require it. If possible, qualification firing should be completed in one day.

4202. Procedures

Procedures for range firing are outlined in chapter 2 of this manual.

CHAPTER 5

BASIC PISTOL AND REVOLVER MARKSMANSHIP TRAINING

SECTION I
GENERAL

5101. Purpose

The primary purpose of this course is to teach individuals the fundamentals of accurate shooting with the Service .38 Caliber Revolver and the Service .45 Caliber Pistol, and to develop sufficient skill in their application to qualify with at least the military minimum of "Marksman."

5102. Discussion

Shooting the handgun with accuracy adequate for military purposes can be a simply taught and easily learned physical skill completely within the capabilities of the average sailor. This preparation is the essence of simplicity. Two fundamentals only are stressed. Individuals should be under positive command control. Only positive instruction is used. Detailed or negative instruction should be studiously avoided. Its use will have a markedly adverse effect on the instruction. Once this method of instruction, with its basic exercises, is understood, it becomes extremely flexible and can be adapted to produce any required level of proficiency from familiarization to military expert with a minimum expenditure of time and ammunition.

5103. Fundamentals

Let us consider the necessities to get a hit with the handgun and an individual's natural habits in relation to these necessities. Where does a pistol hit? Or a revolver? The answer, of course, is extremely simple. The weapon hits wherever it is pointed when it is discharged. So obviously, if we wish to hit a target, we must have the weapon pointed at the target when we discharge the weapon.

In this course we will try to teach Navymen how to have the weapon pointed at the target he wished to hit when the weapon is discharged. The requirements to do this must be completely within the physical capabilities of the individual shooter. The shooter can point the weapon anywhere he desires and if he possesses a working knowledge of the fundamentals presented herein, he will be capable of hitting any military target regardless of shape, composition, or color within the normal range of the weapon.

We use the sights to line up the weapon in precisely the same manner for each shot in order to eliminate angular error. Therefore, if we can line up the sights in a consistent manner and are able to discharge the weapon without disturbing this sight alignment while pointing the weapon at the target area, we will obviously be getting consistent hits in this area. What are the shooters problems in learning these simple physical tasks of lining up the sights, pointing the weapon at the target area and moving the finger to discharge the weapon without disturbing the sight alignment? Habit is a powerful force and a lifetime habit working against us that can be a difficult thing to overcome. From the crawling stage on, what does the average person look at when throwing a ball? The catcher or target? A football? The same. A slingshot? The target. In the average person's previous experience, his lifetime habit pattern has been to look at any target he has desired to hit within what may be considered normal pistol ranges. In other words, if the average shooter doesn't look at the target, he isn't normal. We know that the weapon will hit wherever it is pointed when it is discharged.

Good teaching practice requires that distractions be removed from the teaching area. If we are trying to teach an individual to look at the sights and then place a "bull's-eye" down range for the shooter to hit, this, in combination with the shooter's habit of target fixation can become a major obstacle in reaching our teaching objective. Eliminating the "bull's-eye" and utilizing a blank target is mandatory in primary and basic instruction.

Once again we are trying to teach the individual simple actions: To look at the sights in order to maintain consistent sight alignment; point the weapon at the target area; and discharge the weapon without disturbing the sight alignment. From this we can establish the fundamentals of accurate marksmanship. By fundamental we mean a foundation, an essential, something we cannot do without. As applied to shooting, there are only two fundamentals: Sight alignment and the ability to discharge the weapon without disturbing the sight alignment, which will be referred to as trigger control. If we can do these two things, we will get consistent hits, when the weapon is pointed at the target area, no matter what else we do. If we cannot apply these two fundamentals, it is immaterial what else we do; we will not get consistent hits in the target area. If these fundamentals are accepted, we can then develop the hypothesis that in order to attain maximum accuracy performance with the handgun everything we do in delivering a shot must contribute something positive to sight alignment and trigger control. This is probably physically impossible; so to get into the realm of the possible, we must analyze our actions in relation to their affect on sight alignment and trigger control and discard or cease any actions which have the slightest adverse effect on either of the fundamentals. We are not trying to make polished competitive marksman in our qualification instruction. We merely wish to develop a skill level suitable for military purposes. If we can teach the individual to look at the sights, point the weapon at the target area, and discharge the weapon without disturbing the sight alignment excessively, we will achieve this skill level. This can be readily accomplished if we know what to teach and how to present our instruction.

5104. Techniques

Requisites used to implement the fundamentals. Variations in techniques have been found to be completely inconsequential as long as the primary stress is placed on the fundamentals, sight alignment and trigger control. Do not let techniques take precedence in the shooter's mind over the fundamentals.

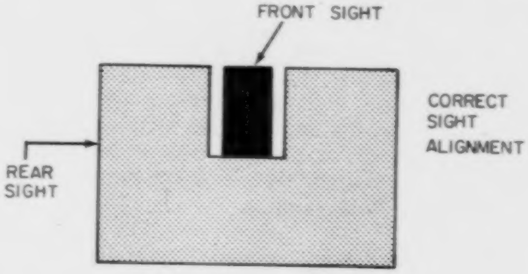


Figure 5-1.—Correct sight alignment.

a. Sight Alignment. The currently accepted sight alignment is used. The top of the front sight even with the top of the rear sight and equal light on both sides of the front sight. An individual should be made to understand that, although any sight alignment can be a correct sight alignment if it is consistent from shot to shot, we are going to use this particular sight alignment because of the ease with which alignment errors can be detected and it will arbitrarily be referred to as the "Correct" sight alignment. Only a minimum will be established for eye usage in the method of looking at the sights. At least one eye open (either eye) looking at the sights when the weapon is discharged.

b. Trigger control. Trigger control is the act of discharging the weapon without disturbing sight alignment. This is accomplished by gripping the weapon in the same manner each time it is to be fired. The two-handed grip is used in firing the Service .38 Caliber Revolver and the Service .45 Caliber Pistol.

(1) To assume the two-handed grip for the Service .38 Caliber Revolver, the weapon

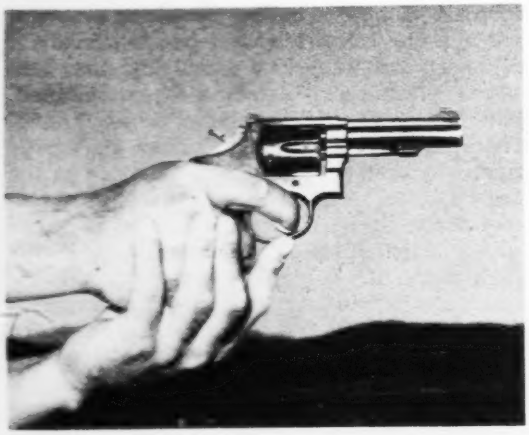


Figure 5-2.—Correct grip—revolver.

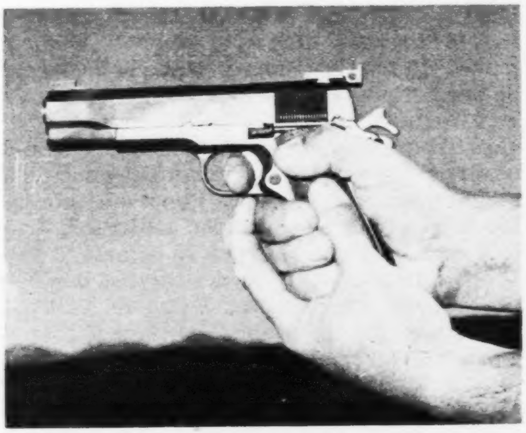


Figure 5-3.—Correct grip—pistol.

is held firmly in the firing hand with the wrist "locked" and the thumb placed against the uncocked hammer. With the thumb held in this position, the middle and ringfinger will form the correct grip on the stock. The little finger may or may not extend and curl beneath the butt. The forefinger is positioned to contact the face of the trigger at the first joint. The other hand supports the weapon by having the fingers and thumb closed over the firing hand. If the weapon can be cocked with relative ease and without changing the grip, the proper grip has been attained. If the hammer is difficult to cock, re-grip the revolver. After cocking the hammer, the thumb of the firing hand is placed along side of the weapon without applying side pressure. See figure 5-2.

(2) To assume the two-handed grip for the Service .45 Caliber Pistol it is placed firmly into the V formed between the thumb and forefinger of the firing hand, with the hand held as high as possible on the frame, the three lower fingers grasping the stock with the middle finger contacting the bottom of the trigger guard. The forefinger is positioned to contact the face of the trigger at the first joint. The other hand supports the pistol in the palm with fingers gripping firmly. See figure 5-3.

5105. Basic Exercises

It is commonly accepted that the most difficult pistol exercise to master is the one referred to as sustained or rapid fire which consists of firing a prescribed number of rounds within a specified time frame. In the Navy Expert Pistol Course, this is five rounds in 15 sec. With the generally accepted methods of pistol instruction, the individual is first schooled in the "fundamentals" with various others such as grip, stance, breathing, etc., varying with the background and experience of the instructor. Shooting exercises are started with slow fire at a bull's-eye target. The shooter is usually told that the rapid fire exercise is very difficult to master and proficiency must first be gained at the slow fire and then the timed fire before any attempt is made to practice the rapid fire. It is also common practice to tell the shooter to shoot the timed fire just like the slow fire, only a little faster, and the rapid fire like the timed fire, and once again a little faster. As instructors, what have we done to ourselves and to the shooters by using these techniques? We are trying to teach the shooter three methods of trigger control: One for slow fire; one for timed fire; and one for rapid fire. Unknowingly and unintentionally, we have built a mental block in the shooter's mind to the effect rapid fire is "tough"? If it were possible, a much more efficient method of instruction would be one, whereby only the rapid fire technique was learned. Once mastered, a single round, slow fire or a single round, timed fire, could be fired with exactly the same technique as a single round, rapid fire. It is not only possible to start the new shooter with rapid fire techniques, it is extremely simple. The shooter is directed to count out the number of rounds for the exercise. Example: "Shooters count out 10 rounds of ammunition." Single rounds are loaded on appropriate command. With magazines out. Place a single round in the chamber and close the slide by holding the pistol in the right hand, finger out of the trigger guard, left thumb holding hammer back, left forefinger depressing slide stop allowing slide to move into battery. With the revolver, a single round is placed in the cylinder and the cylinder closed in such a manner that when the hammer is cocked, the single round will be rotated under the hammer in a firing position. Example: "With one round load." The shooters are then directed to the international ready position (lower arm to 45° angle) by the command, "Extend Pistol." In this position the shooter will be facing the target squarely with feet and shoulder in the most comfortable and natural position. The standard command, "Ready on the Right, Ready on the Left, Ready on the Firing Line" is used to have the shooter raise the weapon to eye level and fire one round followed by an immediate recovery and firing one round dry fire, then clearing the weapon without further command. The key word in this command is "Line." The shooter is directed to adjust his movements to arrive in the firing position on the word "Line." This is also the command to commence firing one round. The requirements of loading and clearing the weapon for each round fired, rapidly improves the individual's facility in weapon familiarization and handling. The requirement for recovery and delivering a second aimed shot, dry fire, lays the groundwork for building successful rapid fire techniques from the first training round fired.

COMMANDS IN SEQUENCE:
"With one Round Load"
"Ready on the Right, Ready on the
Left, Ready on the Firing Line"
(Firing commences)
"Clear all weapons"
After the last round
Magazines out, Slides Back,
Weapons on the Bench"

5106. Application

A recommended lesson guide is provided in Appendix 1.

CHAPTER 6

COMBAT PISTOL TRAINING

SECTION I
GENERAL

6101. Purpose

To acquaint Navymen with their assigned weapon in a simulated combat environment.

6102. Training

Although this course is useful to all Navymen, this type of training is primarily for pilots, naval flight officers aircrewmen and security guards. Pilots, naval flight officers aircrewmen and security guards shall be given this training annually. Combat pistol training should not begin unless an individual has attained a minimum qualification of "Marksman" or higher pistol shot in Course "A" (Chapter 8).

SECTION II
PRELIMINARY COMBAT MARKSMANSHIP TRAINING

6201. General

Preliminary marksmanship training shall consist of basic marksmanship, weapon indoctrination and combat range safety.

6202. Basic Marksmanship

Basic marksmanship training consists of sight alignment, trigger control and griping the pistol. All firing shall be accomplished with the two-hand grip except when standing behind the barricade.

6203. Weapon Indoctrination

Weapon indoctrination should be given to the students for the weapon with which they are armed. Items to be covered should include, but not limited to, specifications, safety features, operation, malfunctions and repairs.

6204. Combat Range Safety

The following safety regulations are in addition to those outlined in the previous chapter.

a. Cylinders/slides may be forward if the weapon is holstered.

b. Know your gun and ammunition, be sure they match. (i.e., .38, .38 special, .38 tracer, .357 magnum, .38 flare.)

c. Know that removing the magazine does not unload a semiautomatic weapon.

d. Be sure of your backstop.

e. Be sure of your target.

f. Obey all firing line commands instantly.

g. Do not handle weapons when someone is forward of the firing line.

h. Assume firing position in these steps: ASSUME POSITION, DRAW WEAPON, AIM, THEN COCK HAMMER.

i. Do not depart from an open position for cover until the cylinder is open. Do not depart a covered position until the weapon is holstered and the safety strap fastened.

j. On position 10, do not cock weapon, use double action. Do not put your finger in the trigger guard until the weapon is pointed at the target.

SECTION III
FIRING POSITIONS

6301. General

All position firing is done with the two-handed grip. This grip is described in the previous chapter. Cocking of the hammer is accomplished without removing either hand from the pistol. A very tight two-handed grip is important.

6302. Combat Positions

a. Prone Position (Open). To assume position, drop down on both knees, using one hand for support, and lower the torso to the ground. The student should be directly facing the target. The feet should be as close together as possible so as to present to the enemy the smallest frontal area as possible. When in this position, the weapon may be drawn. The lowest prone position is accomplished with the butt of the weapon resting on the ground. The next lowest position is with the butt resting on the closed fist of the left hand resting on the ground. (See fig. 6-1.) In the prone position behind cover, the butt of the pistol should rest on whatever is available. (See fig. 6-2.)

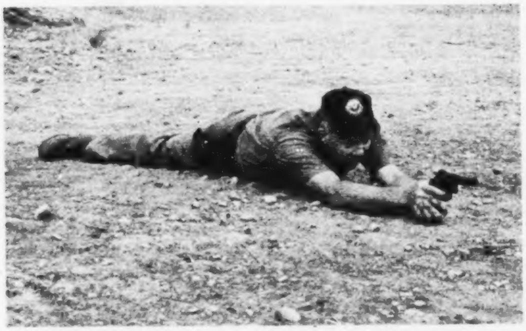


Figure 6-1.—Combat pistol prone position.

b. Sitting Position (Open). To assume position, the student faces the target and drops down to a sitting position. The knees are bent so as to form a support for the elbows to rest on. A crossed leg position provides a steadier foundation. (See fig. 6-3.) Draw the weapon placing the elbows on the knees. The knees may be kept close together or spread depending on the physical characteristics of the student. In the sitting position behind cover, the student uses the barricade for support of the weapon instead of his knees, and places the butt of the weapon on the barricade if at all possible. The arms should be extended to their full length. (See fig. 6-4.) Two-handed grip is used in both these positions.

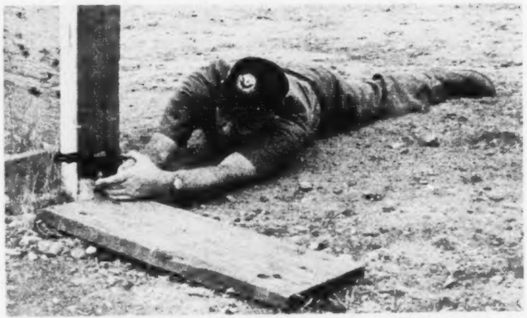


Figure 6-2.—Combat pistol prone position behind cover.

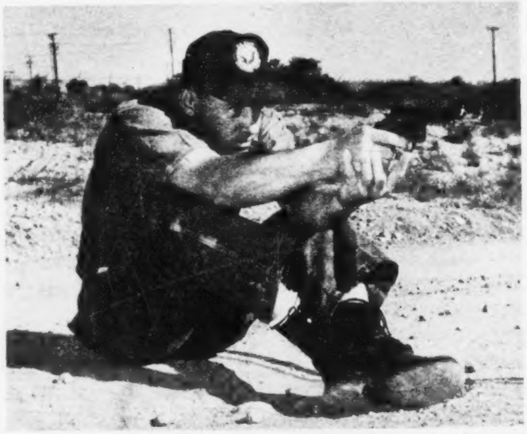


Figure 6-3.—Combat pistol sitting position.

c. Kneeling Position. To assume position, the student faces the target and drops to the ground placing the right leg under the body and sitting on the foot. (See fig. 6-5.) (The side of the foot for low position, or the heel for high position.) In the low position which is considered the steadiest, the left leg is placed well forward of the body in order to support the left arm under the bicep just forward of the armpit. Draw the weapon,

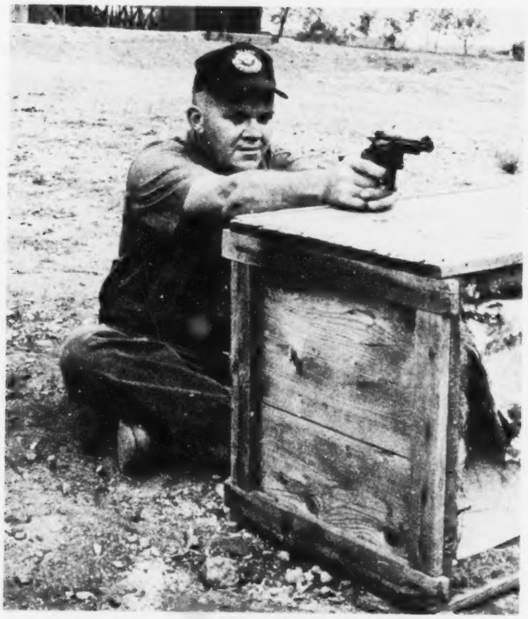


Figure 6-4.—Combat pistol sitting position behind cover.

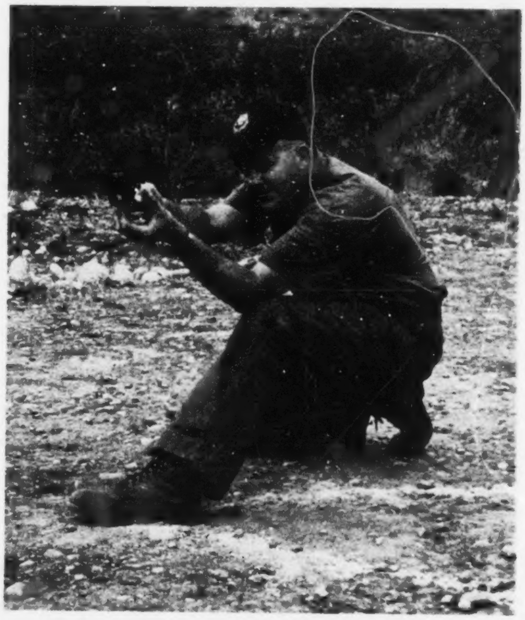


Figure 6-5.—Combat pistol kneeling position.

with the right arm locked, place the butt in the palm of the left hand. Cocking is accomplished with the right thumb. (NOTE: Left-handed shooters sit on opposite foot and use right knee for support.) Kneeling position behind cover, the student used the barricade to support the butt of the weapon. The arms are extended to their full length and the body is raised slightly from the open kneeling position. (See fig. 6-6.)

d. Standing Position Behind a Barricade. Take the weapon in a one hand grip. Place the foot opposite the weapon hand against the edge of the barricade. Place the non-weapon hand against the barricade so the hand forms a V with the thumb and the forefinger. Place the wrist of the gun hand in this V with the weapon extending beyond the barricade. The weapon is cocked with the gun hand. All positions stated for right hand are the same for the left hand. However, the gun hand is determined by the position that affords the most protection. (See figs. 6-7 and 6-8.)

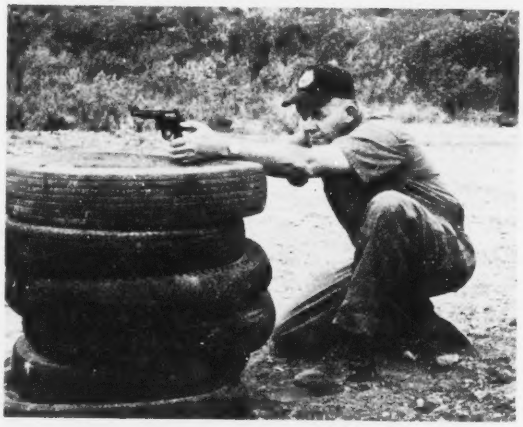


Figure 6-6.—Combat pistol, kneeling position behind cover.

e. Standing Position (Open). To assume position the student faces the target and places his feet slightly more than shoulder

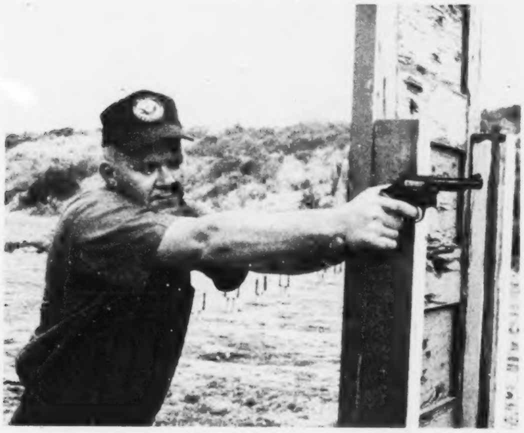


Figure 6-7.—Combat pistol standing position behind barricade—firing from right side.

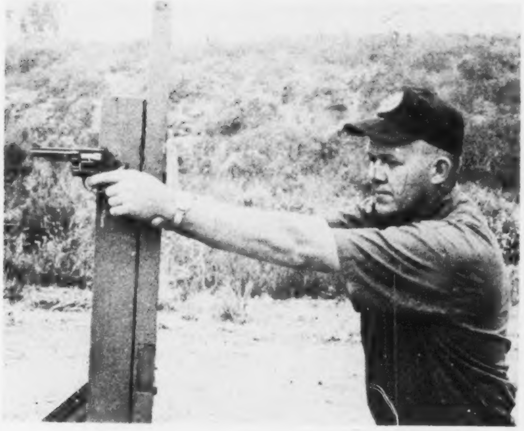


Figure 6-8.—Combat pistol standing position behind barricade—firing from left side.

width apart, draws the weapon and leans slightly towards the target. Use the two hand grip, cock the weapon and aim all shots in this position. (See fig. 6-9.)

f. Crouch Position (Open). To assume position the student faces the target, positions his feet slightly more than shoulder width apart, draws the weapon, points it toward the target, and simultaneously grasps it with both hands firmly. The student brings the weapon up to chest height, focus eyes on the target, not the sights, and fires the weapon double action as rapidly as possible. The knees should be bent slightly in this position. (See fig. 6-10.) This is point shooting using "Quick Kill" techniques, not aimed fire.

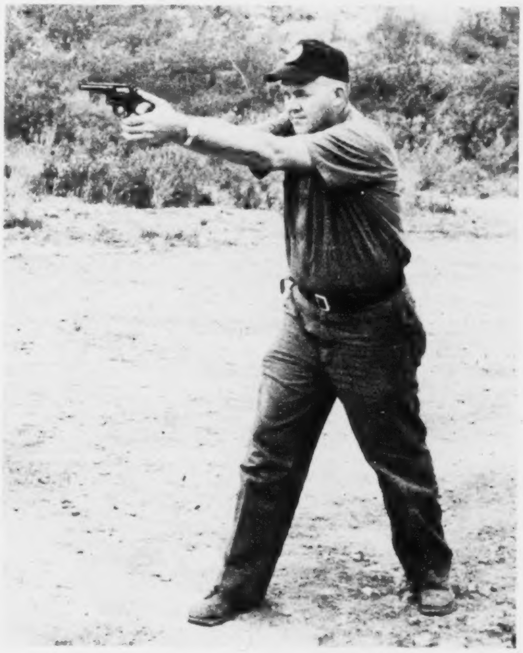


Figure 6-9.—Combat pistol standing position.

SECTION IV
KNOWN DISTANCE RANGE FIRING

6401. General

The purpose of known distance range firing is to give the student a practical exercise in the use of his weapon. This instills confidence in the student with regards to his ability and the accuracy of his weapon.

6402. Preliminary Firing

The purpose of the preliminary firing is to allow the student to practice sight

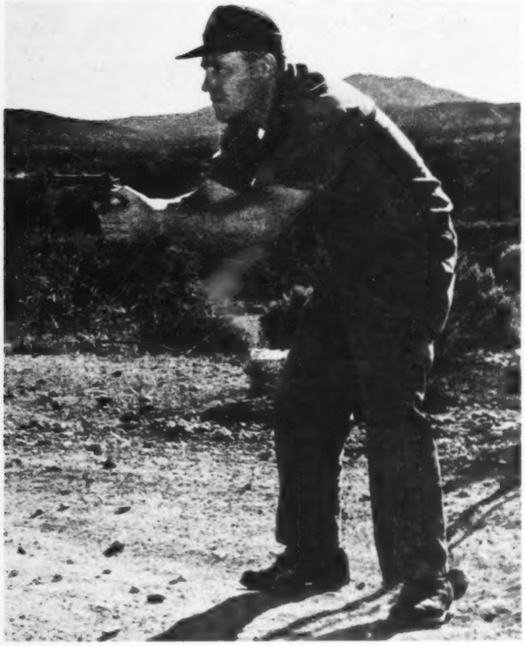


Figure 6-10.—Combat pistol crouch position.

alignment, sight picture and trigger control while assuming some of the positions to be used on the combat pistol course. All firing should be done on blank targets. Six rounds are fired, 2 shots right hand, 2 shots left hand and 2 shots using the barricade for support. Dry firing should also be practiced before the student does any live firing. Six more rounds should then be fired, 2 shots prone, 2 shots sitting and 2 shots kneeling. During this period, emphasis should be placed on proper grip position of trigger finger, sight alignment and trigger control. (See fig. 6-11.)

6403. 100 Yard Range Firing

It is possible to hold off two or three inexperienced riflemen even in the open if the prone position is used and basic marksmanship principles are followed. The purpose of the 100 yard firing is to demonstrate to the student that it is possible to get hits on a

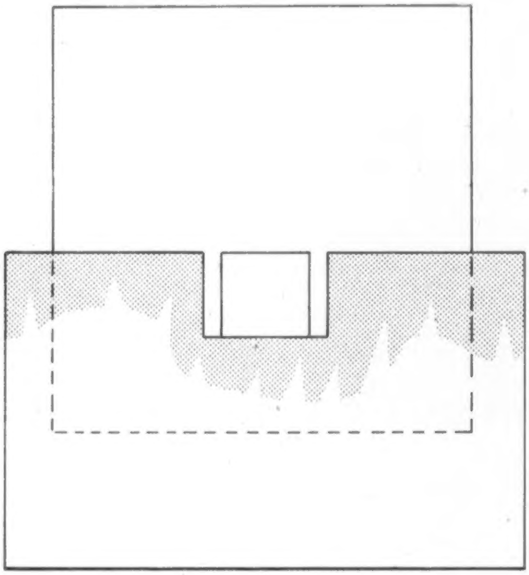


Figure 6-11.—Sight picture, preliminary firing.

silhouette at 100 yards. This will develop confidence in himself and his weapon. The student should assume the prone position (open) as described in the previous section and should use the sight picture as shown in figure 6-12. The student should be appraised of the wind effects and the need for exactness in sight alignment. Six rounds are fired by each student at this range. It is imperative that the butt of the weapon be supported in this type of firing.

6404. Combat Pistol Course Firing

a. Special Instructions

(1) Stay aft of position marker.

(2) Always reload behind the barricade. Upon completion of firing in an open position, open the cylinder then arise and proceed to the next position, ejecting the brass enroute, and reload behind the barricade. If firing is done behind the barricade, reload, holster the revolver, secure the strap over the weapon and proceed to the next point.

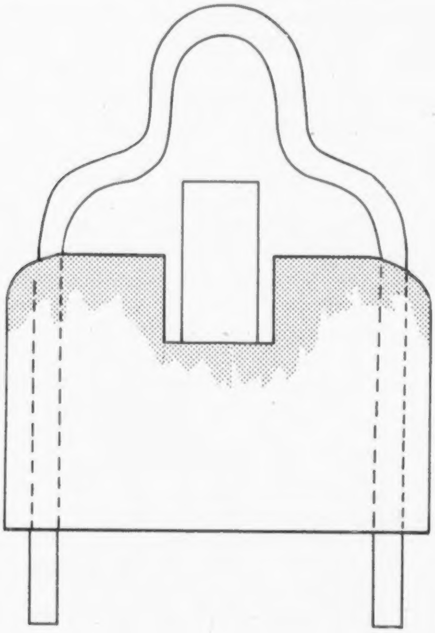


Figure 6-12.—Sight picture 100 yard firing.

(3) Fire on the proper target. The target on the right will receive all shots (20) from the right side of the line and barricade. The left target will receive all shots (25) from left side of the line and barricade. The center target will receive only those shots fired double action from position 10 at the seven yard line.

(4) All firing will be two-handed except at the barricade; position 7 the right hand is used and position 8 the left hand is used.

(5) Sight Picture. See figure 6-13.

(6) Scoring.

(a) Time. This is a timed course. The student will double-time between all points.

(7) Loading/unloading, moving between points is done very rapidly. Slow down for actual aiming and firing.

(8) Each student will be given 50 rounds. These rounds will be placed in the pocket most satisfactory for easy loading. (Normally right side pocket for right-handed shooters.)

(9) Time permitting, a dry-firing run through.

b. Firing Combat Course. Student loads five rounds, holsters the weapon, securing

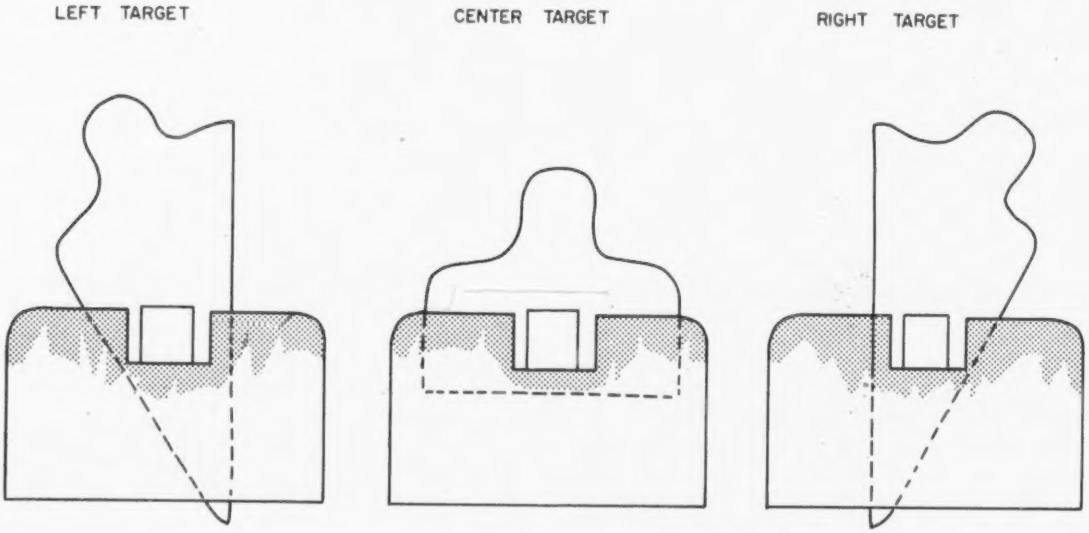


Figure 6-13.—Sight pictures, combat course firing.

the safety strap, and stands by at the starting point. On command, he runs to the first point. POSITION 1. He assumes the prone position, feet together, draws the weapon and using a two-handed grip with no support except the ground, fires five rounds at the target on the right, after which he immediately opens the cylinder, rises and at double-time proceeds to the next point, ejecting empty cases as he goes. At the same time he may be reaching for ammunition with his right hand. POSITION 2. He assumes the prone position, loads, and comes into firing position with only his head and hands in the open. Using a two-hand grip with the butt of the revolver supported, he fires five rounds at the left target, rolls back behind the barricade and reloads, holsters the weapon, secures the safety strap and at double-time proceeds to the next position. Position 3. He assumes the sitting position, in the open, draws the revolver and fires five rounds at the target on the right. He immediately opens the cylinder, rises and at double-time proceeds to the next point ejecting the empty cases with his left hand and reaching for ammunition with his right hand as he goes. POSITION 4. He assumes a position behind the barricade and reloads. He takes the sitting position and using a two hand grip with the butt of the revolver supported, he fires five rounds at the left target. He immediately rolls back behind the barricade, ejects the empty cases, reloads, holsters the weapon, secures the strap and proceeds, double-time, to the next position. POSITION 5. He assumes the kneeling position, in the open, draws the weapon, supporting his arm on his knee, and fires five rounds at the target on the right. He immediately opens the cylinder, rises and proceeds double-time to the next position, ejecting the empty brass with his left hand and reaching for his ammunition with his right hand as he proceeds. POSITION 6. He assumes a kneeling position behind the barricade, reloads and using a two-hand grip with the butt of the pistol supported, fires five rounds at the left target. Behind the barricade he reloads, holsters the weapon, secures the strap and proceeds double-time to the next point. POSITION 7. He assumes a standing position behind the right side of the barricade. He draws the weapon with his right hand and placing his left hand flat against the barricade with the thumb extending outward, he places his wrist in the Vee formed by his thumb and forefinger and fires five rounds at the right target. Immediately the student reloads and turns to the left side of the barricade. POSITION 8. He assumes a standing position behind the left side of the barricade, weapon in the left hand, right palm flat against barricade with thumb extended outward. He places his wrist in the V formed by his thumb and forefinger and fires five rounds at the left target. He immediately reloads, holsters the weapon, securing the safety strap and proceeds double-time to the next point. (CAUTION: Accidental discharges are common in left handed shooting. Insure student keeps muzzle low while cocking the hammer.) POSITION 9. He stops in a crouch, faces the target, draws the weapon and using a two hand grip brings the revolver to eye level, aims and fires five shots single action. Immediately he opens the action and proceeds double-time, ejecting empty rounds as he goes behind the barricade at the reloading point. Kneeling here, he reloads, holsters the revolver, secures the safety strap and proceeds double-time to the next point. POSITION 10. He stops, facing the target, in a crouch, draws the revolver and brings it up to chest level, using a two hand grip, fires five rounds, double action at the center target. He unloads, holsters and secures the strap on the revolver. He removes the targets and returns them to the 55 yard line for scoring. As soon as the range is clear the command is given for the next student to take the starting position. (CAUTION: Ensure that the student does not put his finger in the trigger or cock the weapon as it is being drawn from the holster.)

NOTE: Center target may be a pop-up type actuated by the instructor when the student reaches the firing position at the 7 yard line.

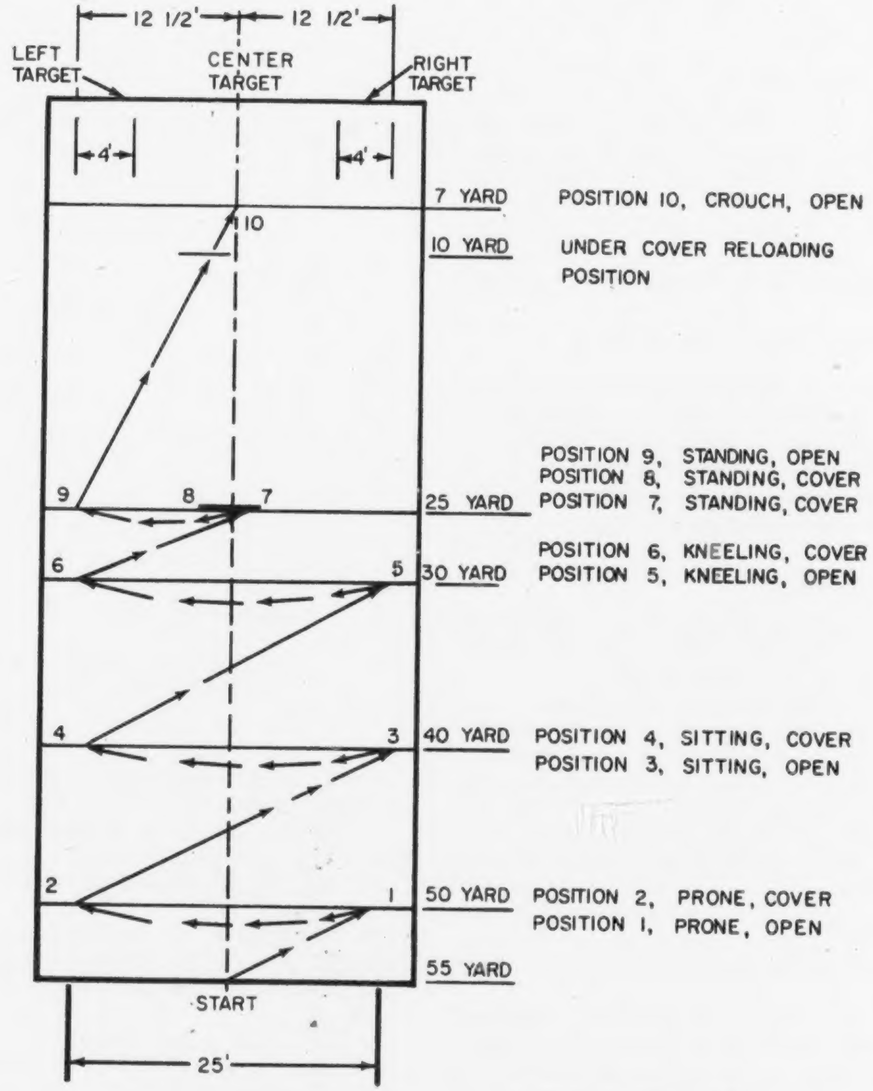

12 1/2'
12 1/2'
LEFT TARGET
CENTER TARGET
RIGHT TARGET
4'
4'
7 YARD
POSITION 10, CROUCH, OPEN
10
10 YARD
UNDER COVER RELOADING POSITION
POSITION 9, STANDING, OPEN
POSITION 8, STANDING, COVER
9
8
7
25 YARD
POSITION 7, STANDING, COVER
POSITION 6, KNEELING, COVER
6
5
30 YARD
POSITION 5, KNEELING, OPEN
4
3
40 YARD
POSITION 4, SITTING, COVER
POSITION 3, SITTING, OPEN
2
1
50 YARD
POSITION 2, PRONE, COVER
POSITION 1, PRONE, OPEN
55 YARD
START
25'

Figure 6-14.—Layout of combat pistol course range.

SECTION V
RANGE LAYOUT AND TARGET USE

6501. General

The Combat Pistol Course has been developed in order that it may be fired on any 50 yard pistol range. There are many different combat courses and one disadvantage to this course is that only one student may fire at a time, however, the disadvantage is overcome in the training in that an individual learns more by running through this course uninterrupted and doing things on his own.

6502. Combat Pistol Course Layout

Figure 6-14 illustrates the layout of the course. Barricades may be constructed from 2 x 4 lumber and a door, plywood or any other type of scrap lumber. Signs at each position indicate the number and position to be used at that position.

6503. Combat Pistol Range Construction

a. This course was devised to be adaptable to any Navy 50 yard range. The exact layout may be varied provided:

(1) Firing distances are exact.

(2) Overall distance covered by student is not varied. For example, if a stanchion is in the way of a right side firing position, move that position either left or right and compensate by moving the left position so that a distance of 25 feet still exists between the two points.

b. Timing. Use of the stop watch is important to:

(1) Provide competitive spirit among students.

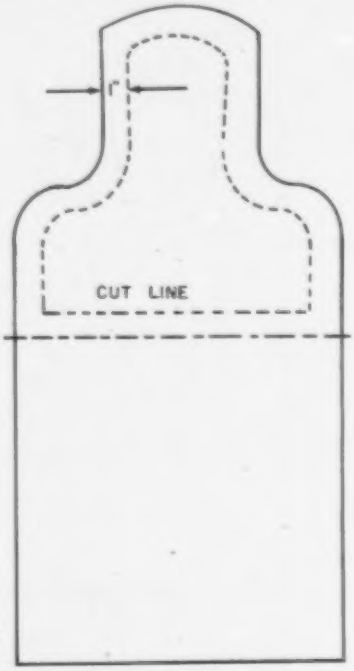
(2) Provide the student with a sense of urgency which may be experienced in combat.

(3) Keep overall time of session to minimum. (Without stop watch, each student will take 15-20 minutes vice 7-10.)

6504. Target Modification and Usage

a. Procedure for modification of silhouette "E" target for the Combat Pistol Course: Center Target. (See fig. 6-15.)

(1) Fold target in half for centerline.



(MODIFICATION OF "E" TARGET)

Figure 6-15.—Combat pistol course center target.

(2) Trace head and shoulder outline 1" in from border and 1" up from centerline.

(3) Cut outline 1" from border or head and 1" up from centerline.

(4) Repeat steps 2 and 3 on lower half of target.

b. Procedure for modification of silhouette "E" paper target from the Combat Pistol Course: Right and Left Targets. See fig. 6-16.

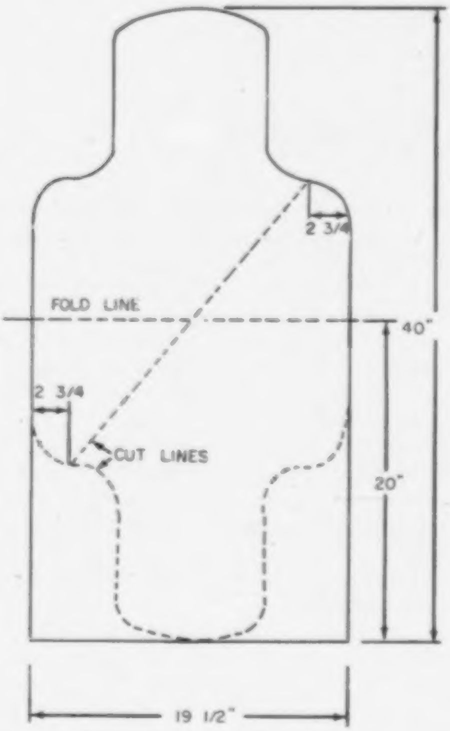
(1) Fold target in half.

(2) Trace head and shoulder outline.

(3) Measure 2-3/4" from edge of target, on both sides.

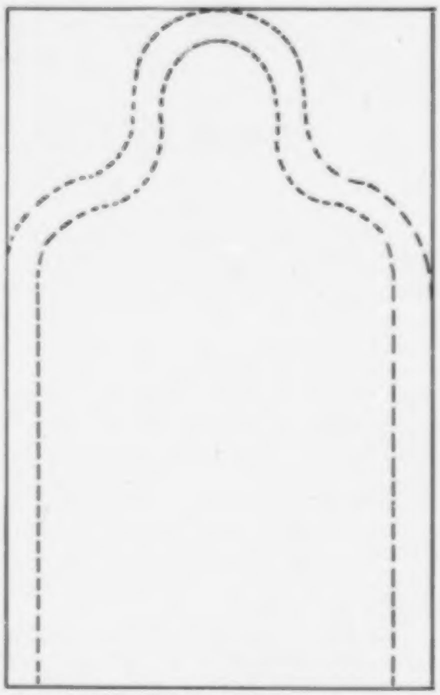
(4) Draw a diagonal line across target from shoulder to shoulder. This is the cut line.

c. Procedure for manufacture of silhouette target for 100 yards pistol/revolver firing. See fig. 6-17.



(MODIFICATION OF "E" TARGET, KNEELING)

Figure 6-16.—Combat pistol course right and left targets.



(MANUFACTURED FROM ALUMINUM OR WOOD USING TARGET "E", KNEELING AS TEMPLATE)

Figure 6-17.—Combat pistol course 100 yard target.

(1) Place target "E", kneeling (FSN 6920-795-1806) on aluminum or plywood sheet 22-1/2 x 43 inches.

(2) Trace outline.

(3) Scribe a 3" line outboard of trace line.

(4) Cut along trace line.

(5) Cut along scribe line.

(6) Supports/legs with 1" x 1" x 36" wooden stakes may be mounted on back of silhouette for support and placement.

(7) Paint appropriate color.

CHAPTER 7

CARE AND CLEANING OF WEAPONS

SECTION I
CARE AND CLEANING THE STANDARD SERVICE U.S. RIFLE .30/7.62mm CALIBER, MODEL M-1

7101. General

Maintenance includes all measures taken to keep the rifle in operating condition. This includes normal cleaning, inspection for defective parts, repair, and lubrication.

a. Cleaning Materials

(1) Although bore cleaner is used primarily for cleaning the bore, it can be used on all metal parts for temporary (one day) protection from rust.

(2) Hot, soapy water or plain hot water is a poor substitute for bore cleaner and will only be used when bore cleaner is not available.

(3) Dry cleaning solvent is used in the cleaning of rifles coated with grease, oil, or corrosion-preventive compounds.

b. Lubricants

(1) Lubricating oil, general purpose, is used on the rifle at normal temperatures.

(2) Lubricating oil, weapons (LAW), is used for temperature below zero degrees Fahrenheit.

(3) Any oil except vegetable oil, may be used as an expedient under combat conditions when the oils prescribed in (1) and (2) above cannot be obtained. However, as soon as possible, the weapon should be cleaned and lubricated with the proper, authorized lubricants.

(4) The proper lubricant should be applied to all metal to metal contact surfaces.

c. General. The rifle must be cleaned after it has been fired because of the residue left in the bore. This residue consists of primer salts, powder ashes, carbon and metal fouling. Normally this residue collects moisture and thus promotes rust and corrosion. A weapon must be properly cleaned prior to lubrication. See figure 7-1.

(1) Chamber. The procedures for cleaning the chamber are as follows: Screw the jointed cleaning rod together firmly (less the patch holder) and insert from the muzzle end of the bore all the way. (An authorized solid nonjointed rod may be used.) Flare the patch out, then insert the patch holder with wet patches into the chamber. Push the threaded end into the chamber until it touches the cleaning rod. Hold it there with one hand. With the other hand screw the rod on to the patch holder, then pull the patches firmly into the chamber.

(2) Bore. Patches dampened with bore cleaner are run through the bore several times. Next the bore brush is attached to the cleaning rod and run back and forth through the bore one to two times. This is followed by more wet patches. Dry patches are then run through the bore until a dry patch comes out clean. Finally, an oily patch is run through the bore to leave a light coat of oil inside the barrel.

(3) Gas Cylinder Plug. A small quantity of bore cleaner is poured in the plug and the bore cleaning brush is inserted and rotated. The brush is removed and the plug is cleaned and dried with patches but not oiled.

(4) Gas Cylinder. The patch holder is installed on a section of the cleaning rod. Two patches are put in the holder, moistened with bore cleaner, and swabbed through the cylinder. The interior surface of the gas cylinder is moistened with the bore cleaner and not oiled.

(5) Face of the Bolt. The face of the bolt is cleaned with a patch and bore cleaner, with particular attention to its inside edges. The bore cleaner is removed with dry patches and the part is oiled lightly.

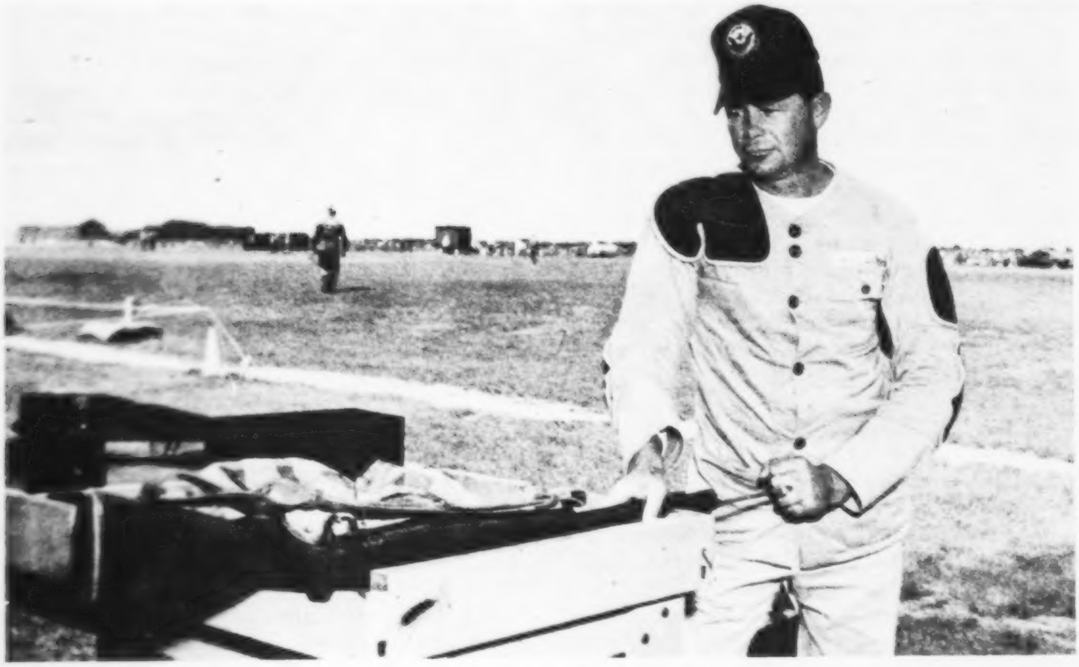


Figure 7-1.—Cleaning the Service rifle.

(6) All Other Parts. A dry cloth is used to remove all dirt or sand from other parts and exterior surfaces. A light coat of oil is applied to the metal parts and raw linseed oil is rubbed into the wooden parts. Care must be taken to prevent linseed oil from getting on metal parts.

d. After Firing. The rifle must be thoroughly cleaned no later than the evening of the day it is fired. For three consecutive days thereafter, evidence of fouling is checked by running a clean patch through the bore and inspecting it. The bore should then be lightly oiled.

7102. Normal Maintenance

a. The rifle should be inspected daily, when in use, for evidence of rust and general appearance. A light coat of oil should be maintained on all metal parts, except the interior of the gas cylinder, and the gas plug.

b. The daily inspection should also reveal any defects such as burred, worn, or cracked parts. Defects should be reported to the armorer for correction.

c. A muzzle plug should never be used on the rifle. It causes moisture to collect in the bore, forming rust and creating a safety hazard.

d. Obtaining the proper rear sight tension is extremely important, since the sight will not hold its adjustment in elevation without it. During normal maintenance and prior to firing, the rear sight must be checked for correct sight tension. The indications of improper sight tension are:

(1) Elevation knob turns with difficulty. When difficult to turn, the windage knob nut is rotated counterclockwise one click at a time with the screwdriver portion of the combination tool. After each click an attempt to turn the elevation knob is made. This process is repeated until the elevation knob can be turned without extreme difficulty.

(2) Elevation knob turns freely without an audible click. When the elevation knob is extremely loose and the rear sight aperture

will not raise, the windage knob nut must be turned in a clockwise direction one click at a time until the aperture can be raised. It is raised to its full height, then lowered two clicks. The rifle is then grasped with the fingers around the small of the stock and downward pressure is exerted on the aperture with the thumb of the same hand. If the aperture drops, sight tension must be adjusted. This is done by turning the windage knob nut in a clockwise direction one click at a time until the aperture can no longer be pushed down by the thumb. If the proper tension cannot be obtained, the rifle must be turned in to the unit armorer.

7103. Special Maintenance

a. Before firing the rifle, the bore and the chamber should be cleaned and dried.

b. Before firing, rifle grease should be applied to the moving or bearing parts. Rifle grease is not used in extremely cold temperatures or when the rifle is exposed to extremes of sand and dust. When temperatures are below freezing, the rifle must be kept free of moisture and excess oil. Moisture and excess oil on the working parts cause them to operate sluggishly or fail. The rifle must be disassembled and wiped with a clean dry cloth. If necessary, dry-cleaning solvent may be used to remove oil or grease. Parts that show signs of wear may be wiped with a patch lightly dampened with lubricating oil. It is best to keep the rifle as close as possible to outside temperatures at all times to prevent the collection of moisture which occurs when cold metal comes in contact with warm air. When the rifle is brought into a warm room, it should not be cleaned until it has reached room temperature.

c. In hot humid climates, or if exposed to salt or salt water atmosphere, the rifle must be inspected thoroughly each day for moisture and rust. It should be kept lightly oiled with special preservative lubricating oil. Raw linseed oil should be frequently applied to an oiled finished stock to prevent swelling.

d. In hot dry climates, the rifle must be cleaned at least daily to remove sand and/or dust from the bore and working parts. In sandy areas the rifle should be kept dry. The muzzle and receiver should be kept covered during sand and dust storms. Wooden parts must be kept oiled with raw linseed oil to prevent drying. The rifle should be lightly oiled when sand or dust conditions decrease.

SECTION II
CARE AND CLEANING OF THE MATCH CONDITIONED U.S. RIFLE CALIBER .30/7.62mm

7201. General

To acquire acceptable accuracy and stability of match conditioned weapons, it is essential that certain component parts be selected, and precisely fitted, to each other in such a way that it becomes difficult, and for certain parts, impossible to disassemble. This information is provided as a guide to be used in the disassembly and assembly of these weapons for the care, cleaning, and lubrication of them.

a. .30 Caliber and 7.62mm M-1 Rifles. The following components are not to be disassembled from the weapons except by the armorers assigned to the Small Arms Training Unit, Naval Training Center, San Diego, California 92133:

Gas Cylinder
Gas Cylinder Lock
Front Hand Guard
Rear Hand Guard
Stacking Ferrule

The components will not be altered or changed in their assembly or tampered with in any way. It is important that all component parts remain as the complete assembly and not be interchanged with parts of other weapons. Proper steps in the disassembly of the rifle for the purpose of care, cleaning and lubrication are as follows:

(1) Lower the rear sight aperture to its stop position.

(2) Unlatch the trigger guard and remove the trigger assembly. This can be accomplished by using a simplified tool made

from the stock end of an old cleaning rod by forming a sharp "U" bend approximately one inch long.

(3) Grasp the receiver and rear sight with one hand; the barrel and front hand guard with the other hand (sights down), tap the heel of the butt plate on some solid object, such as a table top, until the receiver and barrel assembly break free of the stock.

(4) Remove operating rod.

(5) Remove bolt.

(6) Remove the remainder of the receiver parts.

b. Proper care, cleaning and lubrication is essential for proper function, accuracy, and stability of the match conditioned M-1 Rifle. The following guide is to be used in the care, cleaning and lubrication of the rifle:

(1) Clean bore: Each use.

(2) Clean chamber: Each use.

(3) Disassemble weapon, clean and lubricate receiver components and operating rod: Each 300 rounds. See figure 7-2.

(4) Rifle should be stowed with muzzle down and a few drops of bore cleaner applied through the rear of the gas cylinder. This will loosen the carbon and prevent it from caking.

c. The above applies to rifles under normal use. In case of inclement weather, or dusty conditions, daily complete cleaning and lubrication may be necessary.

d. A good lubricant, such as Plastilube or Lubriplate, should be used moderately on the bolt lug operating recesses of the receiver and operating rod, the rod lug recess of the receiver, the firing pin cam of the bolt, the under side of the barrel just forward of the receiver, and receiver bridge. A light coat of oil is sufficient for all other metal surfaces. The bore and chamber should be cleaned with a brass bristle brush and standard chamber cleaning tool first with bore cleaner, then wiped dry with cleaning patches, and a light coating of oil applied, which must be removed prior to firing. When possible, the trigger assembly should be dipped in a solvent and blown out with air, use lubricant sparingly on the hammer spring, guide and plunger, hammer hooks, and sear. In case of inclement weather, the rear sight should be disassembled, dried, lightly oiled, and blown out with air.

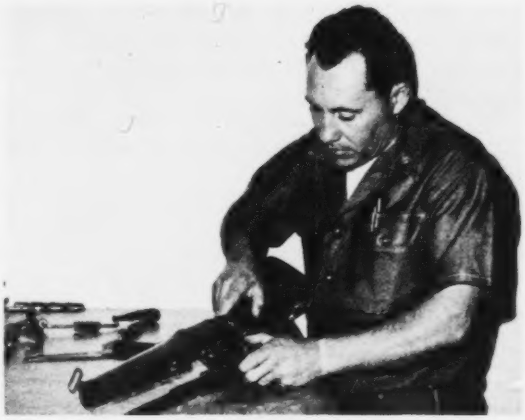


Figure 7-2.—Disassembling the weapon for cleaning.

SECTION III
CARE AND CLEANING OF THE STANDARD SERVICE PISTOL

7301. U.S. Pistol .45 Caliber Model 1911-A1

a. Disassembly procedure for the service pistol.

(1) Check pistol for safe condition, magazine out, chamber empty.

(2) Engage lock safety. Press in on recoil spring, guide, turn bushing clockwise and remove recoil spring plug. Turn plug clockwise and remove from spring.

(3) Turn lock safety to the off position, push slide to the rear until slide stop is aligned with disassembly notch of the slide. Remove slide stop.

(4) Pull slide forward, removing slide, barrel bushing, recoil spring and guide from receiver.

(5) Remove recoil spring and guide.

(6) Turn bushing counterclockwise. Remove barrel and bushing.

(7) With a 1/8 drive pin punch, push in on firing pin, and spring.

(8) With small screwdriver, engage pin stop notch of extractor and remove extractor from slide. (This completes disassemble of the slide.)

(9) To disassemble the receiver components, cock the hammer and remove the lock safety.

(10) Let the hammer forward (don't let hammer fall against receiver) and push out the main spring housing pin from left to right. Remove main spring housing, grip safety, and sear spring.

(11) Remove hammer pin and hammer.

(12) Remove sear pin, sear and disconnector. (This completes disassembly of the receiver.)

b. Cleaning and lubricating guide for the service pistol.

(1) Clean barrel and chamber after each use, using bristle brush and bore cleaner. Wipe dry and lightly oil with patch. Wipe off face of slide.

(2) After 300 rounds, strip slide components with the exception of the extractor and firing pin. Completely clean and relubricate. With cotton patch saturated in bore cleaner, wipe off receiver rails and loading ramp. Wipe dry of bore cleaner and lubricate. Moderately oil the rail and grooves of the receiver and slide. Oil locking lands and grooves of barrel and slide.

(3) After each 1000 rounds, completely strip the receiver and slide of component parts. Clean all parts in solvent. Blow off with air hose, relubricate, and reassemble.

SECTION IV
CARE AND CLEANING OF THE MATCH CONDITIONED SERVICE PISTOL

7401. U.S. Pistol, .45 Caliber Model 1911-A1 (Match)

These match conditioned pistols require approximately seven to nine hours labor in the modification, selection, fitting, and adjusting of their component parts into an accurate and efficient weapon for competitive use. Proper care, cleaning, and lubrication is essential if the weapon is to retain the accuracy and stability built in to it. Improper procedures in the disassembly and assembly of the weapon can be damaging.

a. A proper bushing wrench must be used in the removal of the bushing, which is expanded to fit each particular slide.

b. For the purpose of cleaning and lubricating the pistol, the bushing and barrel should be removed only after 1,000 rounds of use. For more frequent cleaning and lubrication, the following alternate method of disassembly is recommended:

(1) Remove magazine, check pistol for safe condition.

(2) Push slide to the rear, aligning with the slide stop disassembly notch.

(3) Push out slide stop pin.

(4) Pull slide from receiver, gripping the recoil spring and guide as the slide is removed from the receiver.

(5) Remove recoil spring and guide.

The complete barrel and slide assembly should be dipped in and scrubbed out with Navy Standard Type Solvent, and blown out with an air hose. A moderate amount of light oil should be applied to the inside of the slide, especially to the tongue and grooves and barrel locking lands and grooves. Do not use lubriplate or plastilube, or any heavy grease. A lubricant, such as Rig, is recommended for use on the barrel link lug. If this is not available, light oil is sufficient.

Apply a light coat of light oil to the bushing and barrel. The receiver components, consisting of the main spring, housing, thumb safety, grip safety, sear spring, hammer, sear, and disconnector, should be disassembled whenever the slide and barrel assembly is taken down, and the same treatment of cleaning and lubrication applies to these components and the receiver.

c. To reassemble the slide and barrel to the receiver, follow the procedure outlined below:

(1) Compress the recoil spring in to the recoil spring plug and stop the recoil spring guide on the barrel link, hold the recoil spring against the barrel, and install on the receiver. Push the slide to the rear, aligning with slide stop, and re-install slide stop pin in position.

When removing the bushing and barrel from the slide, use the bushing wrench. Turn bushing and remove spring plug. Remove slide from receiver, then remove the recoil spring and guide. Turn bushing (to opposite side of slide), tap forward against the bushing with the barrel until bushing is free of slide.

To reassemble bushing and barrel, use a soft face hammer (plastic or leather) to tap bushing in slide. Be sure that barrel hood is resting against the face of the slide.

Whenever barrel and bushing is removed from the slide, remove all gum from locking lands and grooves of barrel and slide with solvent and lubricate moderately.

d. Following is a cleaning and lubricating guide:

(1) Clean barrel, chamber, and face of slide each 50 rounds.

(2) Clean barrel chamber, and face of slide, lightly oil tongue and groove of slide, top of barrel and bushing each 100 rounds.

(3) Disassemble (alternate method), clean and lubricate slide and barrel assembly, plus receiver components each 250 rounds.

(4) Disassemble (remove barrel and bushing), clean and lubricate all slide and receiver components each 1,000 rounds.

In case of inclement weather on dusty conditions, more cleaning and lubrication may be necessary.

Adequate cleaning and lubrication is essential to the life and accuracy of a match conditioned pistol.

e. Special Instructions.

(1) Information. These pistols are equipped with a new type match target barrel, with zero fitted headspace. For proper functioning, do not exchange or replace the extractor with a standard unmodified part. If the extractor breaks, modify a standard extractor as follows:

(a) Increase the depth of the extractor groove approximately .020.

(b) Reshape the front of the extractor hook to clean the extractor groove of the case (test with dummy round).

NOTE: No part of the extractor should touch the case, except when extracting it from the chamber.

(2) The trigger stop of the aluminum trigger may become loose and not keep its adjustment. If this happens, remove trigger, take out stop screw and coat threads of screw with varnish. Re-install, adjust, and allow varnish to dry.

(3) If at anytime pistol becomes disabled and requires returning to the Small Arms Training Unit for repair, it must be returned with all parts originally issued with the weapon.

CHAPTER 8

QUALIFICATION COURSES

SECTION I
GENERAL

8101. General

Small arms are fundamental military weapons and all officers and men should be reasonably proficient in their use. They should avail themselves of every opportunity to improve their skill with these basic weapons. Competitive shooting shall be encouraged by all commands and supported to the fullest extent possible.

8102. Qualification

Officers and enlisted personnel are graded in rifle and pistol according to proficiency attained in record firings as experts, sharpshooters, marksmen, and unqualified. See figure 8-1. The unqualified grade includes those who have never fired for record as well as those who have fired and fail to qualify within the current calendar year. Officers should have a memorandum entry placed in their official record upon completion of record firing to include weapon, date, course of fire and score. All enlisted personnel who fire for record should have an entry to that effect and the degree of qualification received in block #10 of page 4 of the Service Record. The qualifications designated herein are not to be confused with the National Rifle Association of America classifications, since they do not have a common basis.

8103. Record Firing

An officer and enlisted man may fire for qualification but once in any calendar year, unless he fails to qualify as marksman or better. See figure 8-2. In that event, one additional record firing may be permitted.

Figure 8-1.—Recruits being instructed in proper scoring procedures.

Figure 8-2.—Instructor and recruit check score book.

Chapter 8—QUALIFICATION COURSES

All personnel should be given the opportunity to fire for qualification. Once a record firing is commenced, it must be completed the same day. The object of record qualification firing is two-fold: First: To afford a measure of individual proficiency with the service rifle and service pistol. Second: To provide an opportunity to all Navy personnel to qualify for the marksmanship ribbons. All personnel must fire under the same rules, and precautions must be taken to avoid unfairness. The use of the two-handed grip, as prescribed in chapter 5 is authorized for all pistol firing.

SECTION II
QUALIFICATION COURSE OF FIRE

8201. Course A, Service Pistol and Service Revolver

Maximum score — 300

Expert score — 225

Sharpshooter score — 200

Marksman score — 180

Range	Time	Rounds	Target	Type of Fire
25 yds	None	10	Standard American 25 yds RF and TF (FSN 6920-554-5054)	Slow
25 yds	20 sec	*10	Standard American 25 yds RF and TF (FSN 6920-554-5054)	Timed
25 yds	15 sec	*10	Standard American 25 yds RF and TF (FSN 6920-554-5054)	Rapid

*Time allowed is for one 5 shot magazine.
Total shots record firing—30.

Note: Where adequate facilities do not exist to fire Course A at 25 yards for expert qualification, the use of the International 50 foot pistol target at a 50 foot indoor range is permitted.

8202. Course B, U.S. Rifle, Caliber .30/7.62mm, M1 or U.S. Rifle, Caliber 5.56mm, M16

Maximum score — 200

Expert score — 170

Sharpshooter score — 160

Marksman score — 140

Range	Time	Rounds	Target	Position	Sling
200 yds	2 minutes	**2	A	Prone	Loop
200 yds	5 minutes	5	A	Prone	Loop
200 yds	70 seconds	*10	A	Prone from Standing	Loop
200 yds	5 minutes	5	A	Sitting or Kneeling	Loop
200 yds	70 seconds	*10	A	Sitting from Standing	Loop
200 yds	10 minutes	10	A	Standing	Hasty

*Two rounds initially loaded for M1; two magazines with 5 rounds each for M16.
Total shots record firing—40.
**Sighting shots. Do not include in total score.

Note: Where adequate facilities do not exist to fire Course B at 200 yards for expert qualification, the Commanding Officer may vary or adjust this course to fit available range conditions (e.g., if 100 yards or 1000 inch is the maximum range available, use appropriate target). Target A—(FSN 6920-627-4071).

PART 2

ADVANCED MARKSMANSHIP TRAINING AND COMPETITIONS

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CHAPTER 9

U. S. NAVY SMALL ARMS MARKSMANSHIP PROGRAM

SECTION I
GENERAL

9101. General

As the "sponsor" for small arms training under the provisions of OPNAVINST 1500.22A (Subject: General Military Training), the Chief of Naval Personnel provides support for small arms marksmanship training throughout the Navy. Within the Bureau of Naval Personnel, a Small Arms Marksmanship Training Program Manager is assigned to the Education and Training Support Branch. The program manager administers, supervises and coordinates the Small Arms Marksmanship Training Program to assist commands in teaching Navymen the safe handling of small arms as well as good marksmanship by promoting basic small arms training, competitions and hunter safety. At the core of the Navy marksmanship training program is the Small Arms Training Unit and its match-conditioning shop, located at the Navy Training Center, San Diego, California. Its mission covers the range of Navy marksmanship training from operating and maintaining the Small Arms Marksmanship Instructor School to establishing and developing an integrated system, with necessary manpower, facilities, and equipment, to insure complete and comprehensive development, testing, evaluation, and maintenance of match grade target weapons and related equipment. The Small Arms Training Unit will publish and disseminate to all instructor graduates marksmanship training instructions and to competitive shooters information pertaining to marksmanship training, competition, supplies, equipment, ammunition, and marksmanship technical matters. This information will be provided in the Small Arms Marksmanship Instructor Notebook.

9102. Small Arms Marksmanship Instructor School

The school is conducted in order to qualify Gunners' Mates (GM) and Aviation Ordnancemen (AO) E-5 and above as Small Arms Marksmanship Instructors. The course described below is extracted from the Formal Schools Manual, NAVPERS 91769.

A-012-0010
INSTRUCTOR-SMALL ARMS
MARKSMANSHIP

Location:	Small Arms Training Unit, Naval Training Center, San Diego, California 92133.
Length:	4 weeks (P)

Navy Skill Identifier for Which Trained:

0811 GM and AO ratings only

Purpose: This course of instruction is to provide the knowledge and skills required to perform specialized duties as an instructor in basic marksmanship with the rifle, pistol, revolver, and shotgun, including firearms safety, mechanical training, maintenance and minor repair of match grade small arms, range operations, coaching techniques, qualification firing, reloading ammunition and the preparation of necessary directive, records and reports in organizing and conducting small arms qualifications and competitions.

Prerequisites: Must be E5 or above in the GM and AO ratings. No security clearance required.

Quota Control: BUPERS (Pers-B2123)

Personnel Report to: Commanding Officer, Naval Training Center, San Diego, California 92133.

Obligated Period of Service: 24 months.

9103. NEC GM-0811 Small Arms Marksmanship Instructor

This NEC is assigned only to personnel in Gunners' Mates (GM) and Aviation Ordnancemen (AO) paygrades E-5 and above. Satisfactory completion of Small Arms Marksmanship Instructor Course (A-012-0010 is mandatory prior to recommendation for Code assignment.

The tasks of the Small Arms Marksmanship Instructor (NEC GM-0811) are to train personnel in all phases of basic marksmanship with the rifle, pistol, revolver, and shotgun, including firearms safety and mechanical training. The maintenance and minor repair of match grade small arms, range operations, team coaching, qualification firing, and the preparation of necessary directives, records, and reports in organizing and conducting qualification firing and competitions are also included. The following duties of the instructor are intended as guides:

a. Conduct training of ordnance personnel and other individuals assigned to range duty in safe range procedures and local range regulations for the conduct of qualification firing exercises.

b. Assume direct or supervisory control of personnel assigned to range duty by being physically present when appropriate on the firing range.

c. Carry out small arms training for watch standers, security guards, plane crews, and seamen practical factor check-outs.

d. Increase interest and proficiency in marksmanship by organizing and supervising competition-in-arms. The local competition-in-arms program may be effectively carried out by establishing intramural rifle, pistol and shotgun competitions and scheduling recreation matches.

e. To stimulate a greater interest in and to extend the scope of regular small arms training, the instructor shall:

(1) Plan and conduct intramural competitions based on teams authorized in the tables prescribed in chapter 10.

(2) Organize and train teams for competitive friendly rivalry between commands in order to develop a strong team for subsequent representation in the annual Atlantic or Pacific Fleet Matches.

(3) Prepare annual budget for targets and supplies used in training and competitions.

(4) Provide specialized training and guidance to ordnance personnel in order to qualify these individuals as instructors, range officials and coaches.

(5) Supervise inventory control over all target equipment and materials required in conducting practices and competitions.

(6) Supervise the cleaning of match grade small arms to prevent the interchanging of "close tolerance" fitted components of a match grade weapon with a similar weapon.

(7) Submit recommendations to the Weapons Officer if an exchange of parts is required and those parts require fitting or modification in any manner in order that this work and major repairs may be accomplished by the Director, Small Arms Training Unit, Naval Training Center, San Diego, California 92133.

CHAPTER 10

COMPETITION-IN-ARMS

SECTION I
COMPETITION

10101. General

a. Commanding officers are encouraged to conduct rifle and pistol competitions to the fullest extent that time, facilities and ammunition allowances will permit. The object of such competition is to stimulate a greater interest in and to extend the scope of regular small arms training. This will develop individuals to represent the Navy in national and international competitions. Competitions should be conducted in such a manner as to promote maximum proficiency in the use of small arms and provide recreation.

b. The officer conducting a competition or match will designate the executive officer, the chief range officer and other assisting officials and will provide for all the range services required for conduct of the matches. The executive officer of a competition will be charged with the conduct of the matches. He will supervise the officials and the preparation of the records and reports and will be in charge of range operations during the firing of the matches. On questions of procedures or interpretation of the rules, the decision of the executive officer is final, except that a written protest corroborating an oral one made during a match will be considered by the officer conducting the match, after the executive officer has commented on such protest. The rules and regulations governing the competitions shall be the current OPNAVINST 3590.7 (series) which governs the rules and regulations for the National Matches, supplemented by the official rules of the National Rifle Association of America.

10102. Organization and Training

a. Each separate command or unit afloat or ashore, such as ships, aircraft squadrons, naval bases, stations or shore activities, should organize and train teams authorized in the table of paragraph b of this section. In small ships or stations where personnel are limited, a division, squadron or base commander may combine the personnel of those units for the purpose of rifle and pistol team organization and training.

b. The number of individuals or teams which may be organized and trained within a command, unit or activity for individual or team competitions shall be based on the current personnel strength as follows:

Team authorized in weapon class	Teams per unit or activity strength (officer and enlisted)			Team Strength	
	100 to 500	500 to 1000	1000 to 2500	Firing Members	Alternate Members
Caliber .22 Pistol	1	2	3	4	2
Caliber .22 Rifle	1	2	3	6	2
Caliber .30/7.62 Rifle	1	2	3	6	2
Caliber .38 Revolver	1	2	3	4	2
Caliber .45 Pistol	1	2	3	4	2

A team shall consist of the number of personnel indicated in the table and shall include a team captain and a team coach either or both of whom may be firing members of alternates. The alternates are not required in order to maintain a team, but no team may enter a match with less than the number of firing members indicated. Individuals shall be selected for team membership solely on ability regardless of status as an officer or enlisted man.

10103. Individual Training and Match Shooting

a. Ammunition may be provided to individuals in proportion to the amounts allowed for teams in paragraph 10102.b. if teams cannot be formed for any reason.

b. All competitions normally will include both team and individual matches.

c. Members of teams shall be permitted and encouraged to enter individual matches.

d. Provisions shall be made for the entry in matches of all personnel who are qualified, but are not stationed where opportunity is afforded to be a team member.

10104. Inter-Unit Competitions

Each commander who organizes and trains teams as authorized by paragraph 10102. may, within the limits of his ammunition allowance, conduct such training as desired for the purpose of selecting team members and developing one team to represent the command.

10105. Local Competitions

a. Navy shooters and teams should be provided opportunities where possible to enter various local, state, and regional rifle and pistol matches held under the sponsorship of civilian clubs.

b. Commanding officers of units or activities that develop rifle and pistol teams and individual shooters, as authorized above, are encouraged to arrange competitions with friendly foreign nationals, other armed services and reserve components, law enforcement agencies, and civilian rifle and pistol clubs in the local vicinity. These matches should, where possible, he held under the regulations promulgated by the National Rifle Association of America. This will give all shooters a common basis for rules. Navy shooters and teams entered in matches held under other than Navy jurisdiction will conform to the rules and regulations of the host organization in regard to eligibility, conduct of matches, courses to be fired, weapons, ammunition and team composition.

10106. Inter-Type and Inter-District Competitions

Type commanders, district commandants, or the senior officers present when ships are operating in close proximity, may conduct small arms competitions matching teams in each weapon class from the units afloat and/or activities ashore. It is intended that the teams in each weapon class developed by the units in inter-unit or local competitions provided for in the above paragraphs be afforded the opportunity to compete with teams from naval commands. A commander or commandant conducting such a competition may invite commanding officers within a reasonable proximity to make team or individual entries from their respective commands. Competitions between teams from shore activities and teams from units of different types should be conducted by arrangement through the appropriate type commanders or district commandants.

SECTION II
ELIMINATION COMPETITIONS

10201. General

These competitions are considered to be as follows: Annual District/Type Command, Fleet and All-Navy Competitions. Shooters will progress only to the next higher level of competition if qualified. However, authority may be granted to any individual to participate in the Fleet Competition by the officer conducting the competition, provided that the individual has previously qualified as "Navy

Expert" and was not afforded the opportunity to participate in the lower level competitions. The Chief of Naval Personnel will promulgate, by notice, annually, the inclusive dates when each of the Fleet and All-Navy Competitions are to be held and will designate the host commands.

10202. District/Type Command Competitions

District/Type Commands Annual Competition shall consist of at least the following:

a. An individual rifle match fired with the service rifle (.30 caliber/7.62mm) once over the National Match Course (modified). (See paragraph 10207.)

b. An individual pistol match fired with the service pistol (1911-A1.45 caliber), once over the National Match Course. (See paragraph 10207.)

c. Team matches with each of the above weapons fired over the National Match Course. The officer conducting these competitions will promulgate specific detailed instructions concerning dates, weapons, ammunition, etc.

10203. Fleet Competitions

The Commander-in-Chiefs of the Atlantic and Pacific Fleets shall hold annual fleet competitions matching individuals and teams from the competitions held in accordance with paragraph 10202.

Atlantic Fleet. Each Atlantic Fleet Type Command, COMONE, COMTHREE, COMFOUR, COMFIVE, COMSIX, COMNINE, COMTEN, COMFIFTEEN, COMNAVDISTWASH, CNABATRA, CNATECHTRA, CNAVANTRA.

Pacific Fleet. Each Pacific Fleet Type Command, COMEIGHT, COMELEVEN, COMTWELVE, COMTHIRTEEN, COMFOURTEEN, COMSEVENTEEN, COMNAVFORJAPAN, COMNAVPHIL, COMNAVMARIANAS.

a. Those commands listed above shall hold elimination competitions in order to field a team in the Fleet competition. A type commander afloat or ashore may hold his elimination competition in conjunction with those of the appropriate naval district commandant when adequate arrangements are made.

b. Firing of the Individual Rifle Match. The prescribed course will be fired once over the National Match Course (modified). All four stages of a match will be completed for all competitors before any competitor fires the next course. Stages will be fired in sequence, beginning with 200 yards, standing.

c. Rifle Excellence-in-Competition Match. The Rifle Excellence-in-Competition Match will be fired after completion of the individual rifle match. Only *nondistinguished personnel will be permitted to fire. This match will not be a part of the Individual Rifle Match.

d. Firing of the Individual Pistol Match. The Individual Pistol Match will be fired after completion of the fleet rifle matches. The record firing may be completed on the same day. One relay will complete a course of fire before the next relay is permitted to fire, except on ranges where 50- and 25-yard firing can be conducted simultaneously. Twice over the National Match Course will constitute the Individual Pistol Match.

e. Pistol Excellence-in-Competition Match. This match will be fired following the completion of the Individual Pistol Match. Only *nondistinguished personnel will be eligible to fire in this match. This match will not be a part of the Individual Pistol Match.

f. Firing of the Fleet Rifle Team Match. Each team will occupy one numbered firing point. In slow stages, two team competitors will occupy the firing point and fire alternately, the right firing first. Stages will be fired in sequence beginning with 200 yards, standing.

g. Firing of the Fleet Pistol Team Match. The Fleet Pistol Team Match will be fired after the completion of the Fleet Individual Pistol Match. Each team will be assigned two adjacent targets. In each relay, two

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*Nondistinguished is defined as those personnel not having earned 30 points toward Distinguished Marksman or Distinguished Pistol Shot as outlined in chapter 12.

Figure 10-1.—Fleet, All Navy, Interservice and National Pistol Champion—ADR1 Donald L. Hamilton, USNR.

members of each team will fire the entire course.

h. Eligibility. In order to be eligible for team competition a rifle team must have at least two "new shooters" who are firing members. A pistol team must have at least one "new shooter" who is a firing member. A "new shooter" is defined as an individual who has never before participated in competition with that particular weapon at the Fleet, All-Navy or National level of competition. A competitor who had previously participated with the pistol and not the rifle is eligible to participate with the rifle as a "new shooter" and vice versa. See figure 10-1.

10204. All-Navy Competition

At the conclusion of the Atlantic and Pacific Fleet Competition, a 10-man rifle and 8-man pistol team will be selected from the top marksman of each fleet to represent CINCLANTFLT and CINCPACFLT for the All-Navy Team Championship. In addition, 18 individual rifle and 18 individual pistol marksman, not members of the CINCLANTFLT and CINCPACFLT teams will be selected to participate in the All-Navy competition.

a. Firing of the Individual Service Rifle Match. The prescribed course will be once over the National Match Course (modified). All four stages of a match will be completed for all competitors before any competitor fires the next course. Stages will be fired in sequence, beginning with 200 yards, standing.

b. Rifle Excellence-in-Competition Match. The Excellence-in-Competition Match will be fired after the completion of the Individual Rifle Match. Only nondistinguished personnel will be permitted to fire in this match. This match will not be a part of the Individual Service Rifle Match.

c. Firing of the Individual Service Pistol Match. The Individual Pistol Match will be fired after the completion of the Individual Rifle Match. The record firing may be completed on the same day. One relay will complete a course of fire before the next relay will be permitted to fire, except on ranges where 50- and 25-yards can be conducted simultaneously. Firing twice over the National Match Course will constitute the Individual Pistol Match.

d. Pistol Excellence-in-Competition Match. This match will be fired following the completion of the Individual Pistol Match. Only nondistinguished personnel will be permitted to fire in this match. This match will not be a part of the Individual Service Pistol Match.

e. Firing of the All-Navy Rifle Team Match. Each team will occupy one numbered firing point. In slow fire stages two team competitors will occupy the same firing point and will fire alternately. The competitor on the right will fire first. Stages will be fired in sequence, beginning with 200 yards, standing.

f. Firing of the All-Navy Pistol Team Match. The All-Navy Pistol Team Match will be fired after the completion of the Individual Pistol Match. Each team will be assigned two adjacent targets, in each relay, two members of each team will fire the entire course.

g. Individuals and team members in the All-Navy Competition will be permitted to compete in both the rifle and pistol individual matches.

h. Firing of the All-Navy Combat Infantry Rifle Team Match. One team each from the Fleet Competition will be selected to represent CINCLANTFLT and CINCPACFLT in the All-Navy Combat Infantry Rifle Team Match. Rules governing the firing of this match are covered in current OPNAVINST 3590.7 (series).

i. Additional courses of fire may be prescribed by the Chief of Naval Personnel.

10205. Match Officials

a. Host Commander. The host commander has overall responsibility for supporting and conducting the matches. He will be guided by instructions contained herein.

b. Match Executive Officer. A match executive officer will be appointed by the host commander. He will be guided by instructions contained in this manual and those issued by the host commander. Before a record match begins, the match executive officer or his representative will announce to the assembled competitors, the number and type of awards to be given for the matches.

c. Chief Range Officer. A chief range officer will be appointed by the host commander. His duties will include, but need not be limited to, the following:

(1) Safety and discipline.

(2) Training of range operating personnel.

(3) Ensuring that competitors comply with range and match regulations.

(4) Assigning of range personnel to:

(a) Supervise scoring

(b) Verify scores and totals

(c) Make necessary changes on score cards

(d) Ensure competitors sign score cards

d. Statistics Officer. A statistics officer will be appointed by the host commander. He will be responsible for all statistical services in connection with the matches except for the recording of scores on the range.

e. Rifle and Pistol Armorer. The Chief of Naval Personnel will designate those personnel to act as armorers for the Fleet and All-Navy Competitions. They will be responsible for maintenance and repair of all match weapons.

10206. Range Personnel

Range personnel include the following: range officer, assistant range officers, line block officers, line petty officers, pit officer, pit block officers, pit petty officer, scorers, telephone operators, target pullers (on rifle ranges) and target handlers (on pistol ranges).

a. Appointment of Range Personnel. Range personnel will be appointed by the host commander. (Small arms marksmanship instructors and Small Arms Training Unit personnel will generally be assigned these duties.)

(1) Commissioned officers or warrant officers will be appointed as executive officer and statistical officer.

(2) First class petty officers and above will be appointed as chief range officer and pit officer.

(3) Other personnel as available may be appointed to fill all other positions.

b. Range Officer. When more than one range is used to conduct a match, a range officer will be appointed for each. He will be responsible for that part of the match program fired on his range, for safety, discipline, performance and conduct of all personnel on his range, and performing such of the chief range officers duties as may have been specifically delegated to him.

c. Assistant Range Officer. A first class or chief petty officer may be assigned under the direction of the range officer; he will actually control the running of the range by issuing (usually over a public address system) appropriate commands and instructions to all range personnel including competitors. Only those commands and instructions pertaining to the actual operation of the range will be made, except where safety regulations are being or about to be violated, or unless directed by the range officer.

d. Line Block Officers. Line block officers will be assigned in a ratio of one for each 25 targets to assist the range officer. (E-6 or above.)

e. Line Petty Officers. Line petty officers will be assigned in a ratio of one for each 10 targets to assist the line block officers. (E-5 or below.)

f. Pit Officer. A chief petty officer should be assigned as pit officer and is responsible for proper pit operation, operation, safety, discipline, conduct and performance of his pit personnel.

g. Pit Block Officer. Pit block officers will be assigned in a ratio of one for each 25 targets to assist the pit officer. (E-6 or above.)

h. Pit Petty Officers. Pit petty officers will be assigned in a ratio of one for 10 targets to assist pit block officers. (E-5 or below.)

i. Scorers. In rifles matches one scorer will be assigned each target in operation; fewer scorers may be used in pistol. Scorers will be responsible for maintaining correct scores of all competitors firing on their respective targets and will assist scorers on adjacent targets in rapid-fire stages, as directed by the range officer. When shooting is in progress, it is the primary duty of the scorekeeper to observe his shooter, and to be especially watchful for early or late shots and for malfunctions during rapid-fire. Shooters may be used as scorers, if necessary, when not in the act of firing or otherwise occupied on the firing line.

j. Telephone Operators. Telephone operators will be assigned to each telephone jack on the firing line and in the pits. Operators will pass messages only as given or directed by range officers or block officials and pit officers and pit block officials.

k. Two target pullers will be assigned for each target used.

l. One target handler will be assigned for each three targets operated.

10207. Courses of Fire for the Fleet and All-Navy Matches

a. Rifle. The following course will be used in individual and team firing.

Rifle National Match Course (Modified)

Range (yds)	Time Limit	Shots	Target	Position
200	20 min	20	SR	standing
200	50 sec	10	SR	standing to sitting
300	60 sec	10	SR	standing to prone
600 (500)	20 min	20	MR	prone

b. Pistol. The following course will be used in individual and team firing.

Pistol National Match Course

Range (yds)	Time Limit	Shots	Target
50	10 min	10	Standard American 50 yds. Slow Fire.
25	20 sec	10*	Standard American 25 yds. RF & TF.
25	10 sec	10*	Standard American 25 yds. RF & TF.

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*Time allowed is for one 5 shot magazine, 2 magazines to be fired.

10208. Aggregate Scores

a. Individual Service Rifle Aggregate Score consists of once over the National Match Course (modified) as indicated in paragraph 10207—total points 600.

b. Rifle Excellence-in-Competition Match.—total points 500 (10 shots standing).

c. Individual Service Pistol Aggregate Score consists of twice over the National Match Course. Total points 600. (See paragraph 10207.)

d. Pistol Excellence-in-Competition Match.—total points 300.

e. Rifle Team Match.—6 firing members, team captain, team coach and two alternates. Course of fire—National Match Course (10 shots standing).—total points 3000.

f. Pistol Team Match.—4 firing members, team captain, team coach and two alternates. Course of fire—National Match Course.—total points 1200.

g. Individual Rifle and Pistol Combined Aggregate consist of the Individual Rifle Competition score and the Individual Pistol Competition score.—total points 1200.

h. All-Navy Combat Infantry Rifle Team Match.—6 firing members, team captain and team coach and two alternates. Course of fire—Combat Infantry Team Course.

NOTE: Ties in the individual rifle and pistol combined aggregate will be broken as follows: (1) Total "X" count. (2) Score of the Individual Rifle Match.

NOTE: All other ties will be broken in accordance with current NRA rules for the appropriate weapon.

10209. Statistical Services

a. Statistical Officer. The statistical officer will be responsible for all statistical services in connection with the matches except the recording of scores when that is done on the range.

b. The statistical officer will be responsible for providing the following services:

(1) Registering competitors and checking their eligibility.

(2) Preparing a roster of competitors.

(3) Preparing score cards.

(4) Assigning competitors and teams to relays and targets.

(5) Verifying score card entries and totals.

(6) Maintaining a statistics board on the range.

(7) Determining medal and award winners.

(8) Publishing and distributing official match bulletins.

c. Registration of Competitors. Registration consists of a competitor personally filling out the competitor's registration card. Registration will be required of each competitor prior to his participating in the marksmanship school, practice firing, or a match, as appropriate.

(1) In the event a registrant is determined to be ineligible in accordance with this directive, the executive officer will be notified.

(2) Registration for team matches will be required one day prior to the firing of the match. Names of firing members of teams will be required at the statistical office not later than one hour prior to the beginning of the match.

d. Preparation of Score Cards. A score card will be prepared for each registered competitor and team for each match entered. Only official score cards will be used.

e. Report of Rifle and Pistol Matches. (OPNAV REPORT SYMBOL 3574-3.) Immediately upon completion of Fleet and All-Navy Rifle and Pistol Competition, the officer conducting the competition shall submit to the Chief of Naval Personnel (copy to CNO) a letter report for each match fired giving the following information:

(1) Date and place of each match.

(2) Name, unit or organization of winning team and aggregate score.

(3) Name, rank or rate and aggregate scores of each individual medal winner in individual matches.

(4) List name, unit or station of other competing teams, their aggregate scores and standing in team matches.

(5) The letter shall comment upon the conduct of the competition and provide any item of interest in regard to small arms training and team organization.

In addition, a similar appropriate report shall be submitted to the Chief of Naval Personnel describing the results of local, intertype, interdistrict and other competitions in which Navy personnel or teams participate. Such report will be submitted by the officer conducting the competition, if it is a Navy-conducted match; otherwise, it will be submitted by the command whose personnel and/or teams participated.

SECTION III
INTERSERVICE AND NATIONAL MATCHES

10301. General

a. The U.S. Navy and U.S. Naval Reserve will be officially represented at the Interservice Competitions and National Matches with a rifle and pistol team. The U.S. Navy Teams are formed at the completion of the All-Navy Championships. The U.S. Naval Reserve Teams are formed from those reservists whose continuous performance in competition-in-arms indicates they are best qualified.

b. A maximum of thirty-two riflemen and twenty-eight pistolmen will be selected for assignment to the U.S. Navy Rifle and Pistol Teams. A maximum of 12 riflemen and 8 pistolmen will be selected for assignment to the U.S. Naval Reserve Rifle and Pistol Teams.

c. Representation by the Navy in the Interservice Competitions will be as deemed appropriate by the Chief of Naval Personnel.

d. An officer-in-charge of the U.S. Navy and U.S. Naval Reserve Rifle and Pistol Teams for the Interservice and National Matches will be designated by the Chief of Naval Personnel. The officer-in-charge will be responsible for organizing, training, and entering the teams in the Interservice and National Matches.

e. Individuals who are selected as members of the U.S. Navy and U.S. Naval Reserve Teams will be ordered to report to the officer-in-charge.

SECTION IV
ELIGIBILITY FOR COMPETITION-IN-ARMS PROGRAM

10401. Eligibility

	Competitions		
Personnel Categories	District/ Type Commander	Fleet	All-Navy
Active Duty Naval Personnel	Yes	Yes (1)	Yes (2)
Inactive Naval Reservists	Yes	Yes	Yes (4)
Fleet Reserve Personnel	Yes	Yes	Yes (4)
Retired Personnel USN/USNR	Yes (3)	Yes (3)	Yes (3)(4)

Notes:

(1) Eligibility is based on scores fired in the district/type commanders elimination. A minimum qualifying score of "Navy Marksman" is required for rifle and pistol.

(2) Selected by the host fleet commander.

(3) Must provide own weapons and ammunition except ammunition issued for rifle and pistol excellence-in-competition matches.

(4) Eligible only if "Distinguished Rifleman" or "Pistol Shot" or has credit points towards the appropriate distinguished badge.

(a) Naval reservists on inactive duty, Fleet Reserve and retired naval personnel are allowed to fire in individual matches only.

(b) Marine Corps and Coast Guard personnel are not authorized to participate in this program.

(c) Authority may be granted by the host fleet commander to naval personnel to participate in the fleet competition provided the individuals have previously qualified as "Distinguished Rifleman" or "Pistol Shot," "Navy Expert," or have earned credit points towards the distinguished badges, and were unable to fire in the district/type commander rifle and pistol competitions.

(d) When a competitor's performance indicates he is not qualified to continue at any level of the competitions, he may be declared ineligible by the chief range officer and match executive officer. A report of individuals declared ineligible will be made a part of OPNAV Report 3574-3 which is submitted upon conclusion of the competitions.

SECTION V
COMPETITIONS DEFINED

10501. National Matches

a. The National Matches are composed of:

(1) Small Arms Firing School—Pistol.

(2) Small Arms Firing School—Rifle.

(3) Instructor—Junior School.

(4) National Pistol and Revolver Championships.

(5) National Smallbore Rifle Championships.

(6) National High Power Rifle Championships.

(7) National Trophy Individual Pistol Match. (See figure 10-2.)

(8) National Trophy Individual Rifle Match. (See figure 10-3.)

(9) National Trophy Pistol Team Match. (See figure 10-4.)

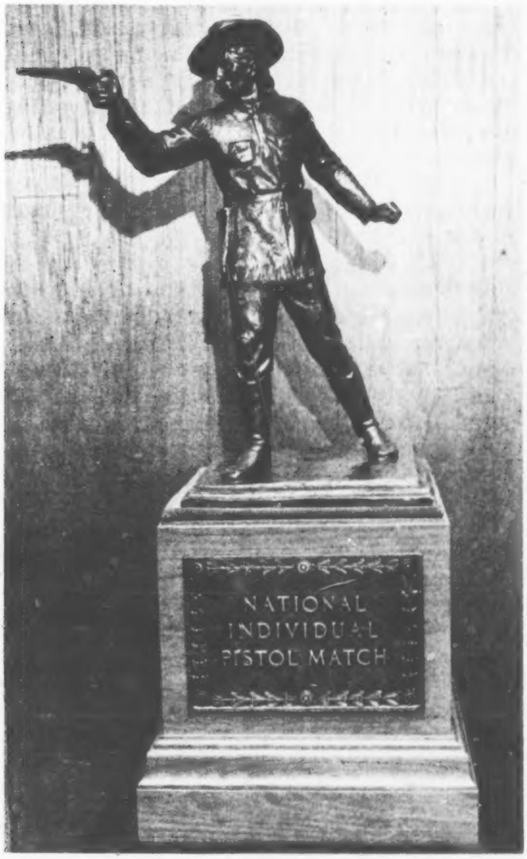


Figure 10-2.—National Individual Pistol Match Trophy.

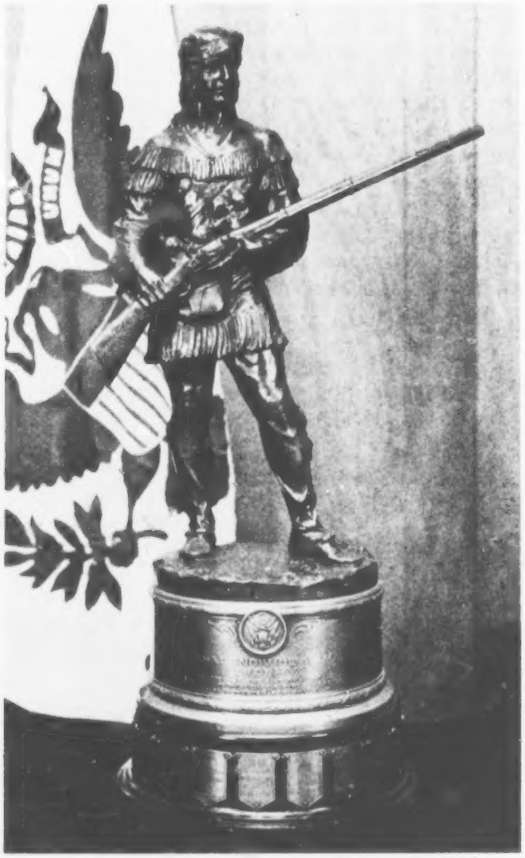


Figure 10-3.—National Individual Rifle Match Trophy.

(10) National Trophy Rifle Team Match. (See figure 10-5.)

(11) National Trophy Infantry Team Match.

b. The National Matches were established by Act of Congress in 1903. The first matches were held that year with participation being limited to teams from the regular service and state National Guard organizations. With the passage of the National Defense Act in 1916, participation of civilian teams from each state was authorized.

c. The National Matches are conducted with the approval of the Secretary of the Army under the general supervision of the National Board for the Promotion of Rifle Practice.

d. The National Matches are conducted by the Match Director, using a combined organization including members of the Army, Navy, Air Force, Marine Corps, Coast Guard, police departments, and the National Rifle Association. Logistical support of the matches is provided by the First United States Army.

e. The Army has on hand service weapons for check-out by individuals for use only during the National Matches. Service

Figure 10-4.—National Pistol Team Match Trophy.

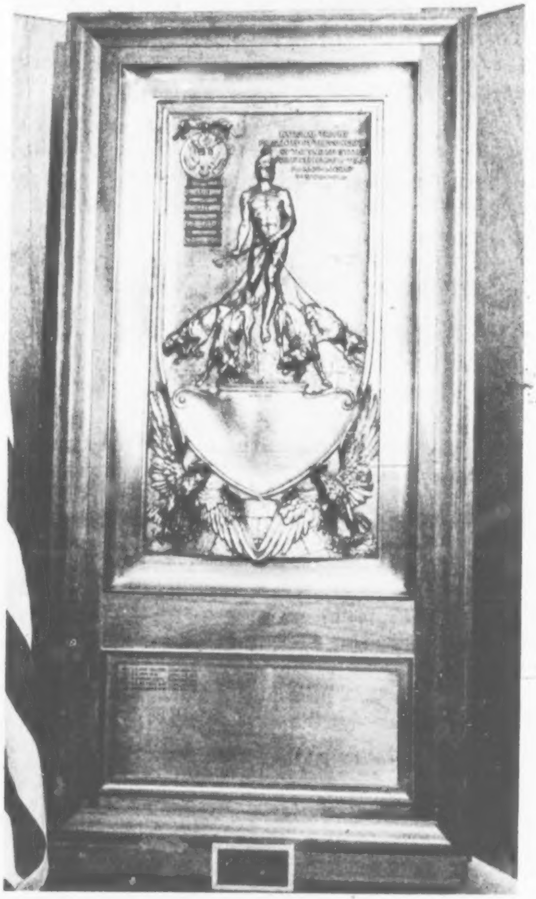


Figure 10-5.—National Rifle Team Match Trophy.

personnel normally use weapons assigned to that service.

f. At the National Matches it is mandatory that the service ammunition as provided by the Army be used in all phases which require the firing of service weapons.

10502. Interservice Competitions

On 18 November 1960, the four service chiefs signed a memorandum of understanding regarding Interservice Small Arms Competition. The competitions are open to all Regular and Reserve members of the U.S. Armed Forces, the National Guard of the United States, and Reserve Officers Training Corps Units.

a. Interservice Pistol Matches. The U.S. Air Force has the responsibility for the conduct of this competition. This competition consists of the individual and team championships and an Excellence-in-Competition Match, held annually at a designated Air Force base.

b. Interservice Rifle Matches. The Navy and Marine Corps annually sponsor this competition. There is an Individual and Team Championship and an Excellence-in-Competition Match, held annually at a designated Marine Corps base.

c. Interservice International Competition. The U.S. Army has the responsibility for the conduct of these competitions. The program generally consists of individual and team championships in all the recognized international events. This competition is held annually at a designated Army base.

10503. Conseil Internationale du Sport Militare Matches (CISM)

The Conseil Internationale du Sport Militare (CISM) is an organization formed in 1946 as the Allied Forces Sports Council and reorganized two years later under its present title.

a. Each year CISM organized international championships in most of the Olympic events, including shooting. Rifle events are conducted with service rifles standard to the host country. International Shooting Union rules otherwise apply. Participation is limited to members of the Armed Forces of the member-nations.

b. Selections to comprise the U.S. Teams each year are conducted during formal tryout competitions. The Chief of Naval Personnel will select those personnel to be entered in the tryouts based on marksmanship ability and availability.

10504. International Competitions

The United States is a member of the International Shooting Union (ISU) which sponsors competition-in-arms. United States Teams are selected during formal tryouts open to both service and civilian personnel. The Chief of Naval Personnel will select personnel to enter these tryouts based upon marksmanship ability and availability. Funding will be the responsibility of the Chief of Naval Personnel.

a. World Championships. Sponsored by individual member countries of the ISU every four years.

b. Pan American Games. Rifle, pistol and shotgun matches are fired as part of the Pan American Games. The games are held every four years.

c. Olympic Games. Shooting events are part of the program of the Olympic Games. The games are held every four years and sponsored by the host country under the auspices of the International Olympic Committee.

CHAPTER 11

MATCH-CONDITIONED WEAPONS AND AMMUNITION

SECTION I
ISSUE AND CONTROL

11101. General

The term match-conditioned weapons apply to the following special small arms:

a. Match-Conditioned Small Arms. Standard Navy rifles and pistols which have been issued from the Navy Supply System to the Small Arms Training Unit, Naval Training Center, San Diego, California, for modification, rework and refinement. See figure 11-1.

Figure 11-1.—Match conditioning the service pistol at the Small Arms Training Unit, San Diego, California.

b. Commercial Match Grade Small Arms. Target rifles, pistols and shotguns produced or modified by the manufacturer for competition shooting.

11102. Source of Supply

a. Match grade small arms are issued by Commander, Naval Ordnance Systems Command as approved by the Chief of Naval Personnel in support of the Small Arms Marksmanship Training Program. Match-conditioned small arms are available in limited numbers and are not a standard allowance item. They will be made available to commands which are most actively engaged in small arms competitions. All requests for match-conditioned small arms shall be submitted to the Commanding Officer, Naval Ammunition Depot (Code 7041), Crane, Indiana 47522, via the Chief of Naval Personnel (Pers-C4312).

b. Ammunition used in team training and matches is standard service small arms ammunition which is issued in accordance with the team training and matches ammunition table prescribed in enclosure 4 of NAVORD-INST 8011.5 (Series).

11103. Implementation

a. The Small Arms Training Unit's match-Conditioning Section will match-condition, and repair rifles, pistols and shotguns. See figure 11-2. This work will include modifications as directed by the Commanding Officer, Naval Ammunition Depot, Crane, Indiana. Upon completion of match-conditioning, small arms will be shipped to the Commanding Officer, Naval Ammunition Depot, Crane, Indiana 47522, for stock and issue to commands designated by the Chief of Naval Personnel (Pers-C4312). In addition, develop budgetary requirements for support of the Small Arms Training Unit's Match Condition Section. Support will include special tools, fixtures, equipment, supplies, small arms

429-191 O - 71 - 7

Figure 11-2.—Match condition rifle assembly shop—Small Arms Training Unit, San Diego, California

components, parts and accessories required for match-conditioning and test firing of small arms. Budgetary requirements will be submitted to the Chief of Naval Personnel (Pers-C4312).

b. Commands will provide only on-site minor maintenance by small arms marksmanship instructors who are graduates of the Small Arms Marksmanship Instructor School conducted by the Small Arms Training Unit. If an exchange of parts is required and those parts require fitting or modification in any manner, this work and major repairs will be accomplished only by the Small Arms Training Unit's Match Condition Section. It is emphasized that no parts or accessories will be removed from match-conditioned small arms before they are returned for repair or exchange.

(1) Commanding officers will make their ordnance facilities available to provide for maintenance and secure stowage of match-conditioned small arms.

(2) Establish a local management system for custody control and issue of match-conditioned small arms.

(3) Make a periodic check at least quarterly, to ascertain that these small arms are returned by personnel and/or team captains when the competitive requirements for which they were drawn are fulfilled. To retain possession, an individual must be continuously engaged in small arms competitions. Small arms which have been issued to team members for temporary custody shall be withdrawn if any team member should foresee an inability to participate in team training and matches for three months or more.

(4) Supervise ordnance personnel in normal maintenance of these small arms to prevent the inter-changing of "close tolerance" fitted components of a match-conditioned weapon with a similar weapon.

(5) Provide support and assistance to the BUPERS Small Arms Marksmanship Instructor (NEC 0811), who, if assigned, is in the best position to evaluate requests for use of small arms.

(6) Inform the Chief of Naval Personnel (Pers-C4312) when match-conditioned small arms are available for reissue. It is emphasized that match-conditioned small arms will always be used for competitive marksmanship. These small arms will not be used in lieu of the standard service small arms for familiarization and qualification training.

c. The Chief of Naval Personnel (Pers-C4312) will:

(1) Review and forward all requests for match-conditioned small arms to the Commanding Officer, Naval Ammunition Depot (Code 7041), Crane, Indiana 47522.

(2) Forward requirements for match-conditioned small arms to the Commander, Naval Ordnance Systems Command, for each fiscal year in support of the Small Arms Marksmanship Training Program.

d. The Commanding Officer, Naval Ammunition Depot, Crane, Indiana will:

(1) Establish maintenance standards, modifications, and specifications for match-conditioning of small arms.

(2) Administer funds allocated for match-conditioning and support of the Small Arms Training Unit's Match Condition Section.

(3) Issue match-conditioned small arms to commands as approved by the Chief of Naval Personnel (C4312).

11104. Match Grade Ammunition

Annually the Chief of Naval Personnel computes requirements to support the Atlantic Fleet Competition, the Pacific Fleet Competition, the All Navy Championship, the Inter-Service and National Matches, and provides the Naval Ordnance Systems Command with a one-time annual distribution of match grade ammunition to designated activities with BUPERS assigned small arms marksmanship instructors. Accordingly, match grade small arms ammunition is not stocked in the ammunition supply system.

CHAPTER 12

MARKSMANSHIP TROPHIES AND AWARDS

SECTION I
Trophies

12101. Fleet Trophies

The Commander-in-Chief of each Fleet will award fleet trophies to the team making the highest score in the Fleet Rifle Match, Fleet Pistol Match, Fleet Skeet Match and Fleet Clay Pigeon Match. The name of the winning ship, unit, base, or station will be engraved on the trophy as soon as practicable after its receipt. The trophies will be retained by the winning unit until 30 days prior to the next annual Atlantic Fleet and Pacific Fleet Competition, when they will be returned to the appropriate site of the fleet competition which is announced annually in BUPERSNOTE 3590.

12102. Chief of Naval Personnel Trophies

The Chief of Naval Personnel will award All-Navy trophies to the team making the highest score in the All-Navy Rifle Match, All-Navy Pistol Match, All-Navy Skeet Match and All-Navy Clay Pigeon Match. See figure 12-1. These trophies will be transferred, upon completion of the matches, to the appropriate flagship or headquarters of the winning team. The name of the winning fleet will be engraved on the All-Navy. Trophy. See figure 12-2. The trophy will be retained by the winning flagship or headquarters until 30 days prior to the next All-Navy Championship which is announced annually in BUPERSNOTE 3590.

12103. Chief of Naval Operations Trophy

The Chief of Naval Operations Trophy, known as "Burke's Bonnet" will be awarded to the winning team in the Combat Rifle Team Match. See figure 12-3. One Atlantic Fleet team and one Pacific Fleet team will compete. The engraving and retention of this trophy will be the same as specified for the All-Navy Trophies.

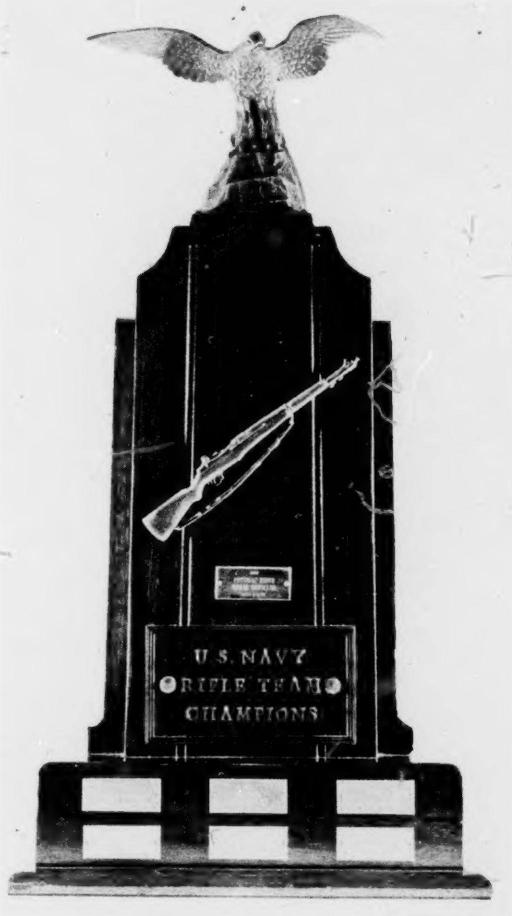


Figure 12-1.—All-Navy Rifle Team Trophy.

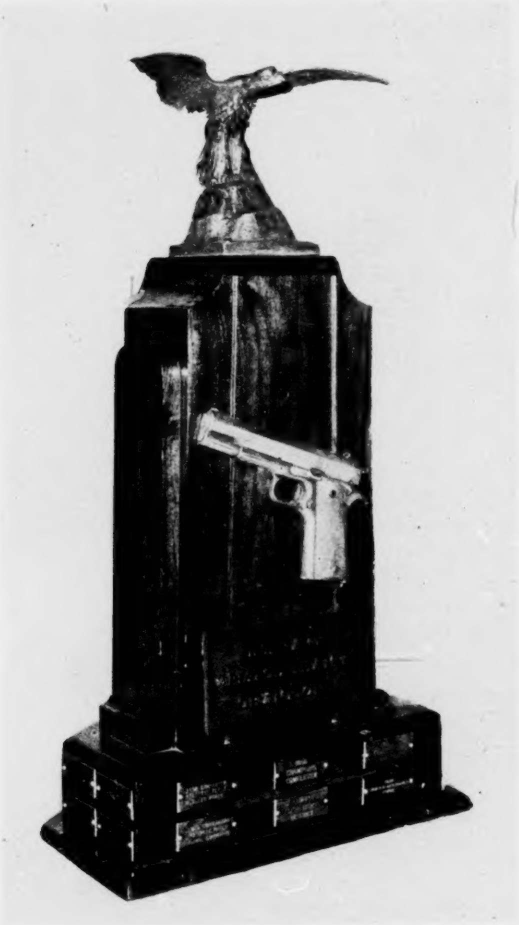


Figure 12-2.—All-Navy Pistol Team Trophy.

12104. Secretary of the Navy Trophies

The Chief of Naval Personnel is authorized to present trophy rifles in the name of the Secretary of the Navy, to Navy and Marine Corps personnel who are match winners in the Fleet, All-Navy and National Matches. These trophies have been provided by the Commander, Naval Ordnance Systems Command to the Chief of Naval Personnel as annual awards.

SECTION II
MARKSMANSHIP AWARDS

12201. United States Distinguished International Shooter Badge

The highest achievement in the field of competitive marksmanship in the United States is denoted by designation as United States Distinguished International Shooter. This badge is awarded by the National Board for the Promotion of Rifle Practice (NBPRP) to those shooting members of United States Team who win a first-place gold medal, second-place silver, or third-place bronze medal in individual or team events in International Shooting Union events, Pan-American or Olympic Games shooting events. It is authorized for wear on the naval uniform for both officer and enlisted personnel.

12202. U.S. Navy Distinguished Marksman/Pistol Shot Badges

a. The highest achievement in the field of competitive marksmanship in the Navy is denoted by designation as Distinguished Marksman or Distinguished Pistol Shot. Individuals who meet the qualifications for these awards will be awarded the appropriate U.S. Navy Distinguished Badge by the Chief of Navy Personnel. See figure 12-4.

b. Award of the Distinguished Marksman or Distinguished Pistol Shot Badge shall be made on the basis of individual unassisted performance in recognized individual matches. See figure 12-5.

c. Award of the appropriate badge shall be made when an individual has earned a minimum of 30 points for Excellence-in-Competition in recognized matches.

d. To be eligible for a U.S. Navy Distinguished Badge, an individual must have earned a minimum of 10 credit points in the Fleet, All-Navy, Interservice, or National Matches.

12203. Excellence-in-Competition Badges

a. Excellence-in-Competition Badges ("leg") and credit points toward designation

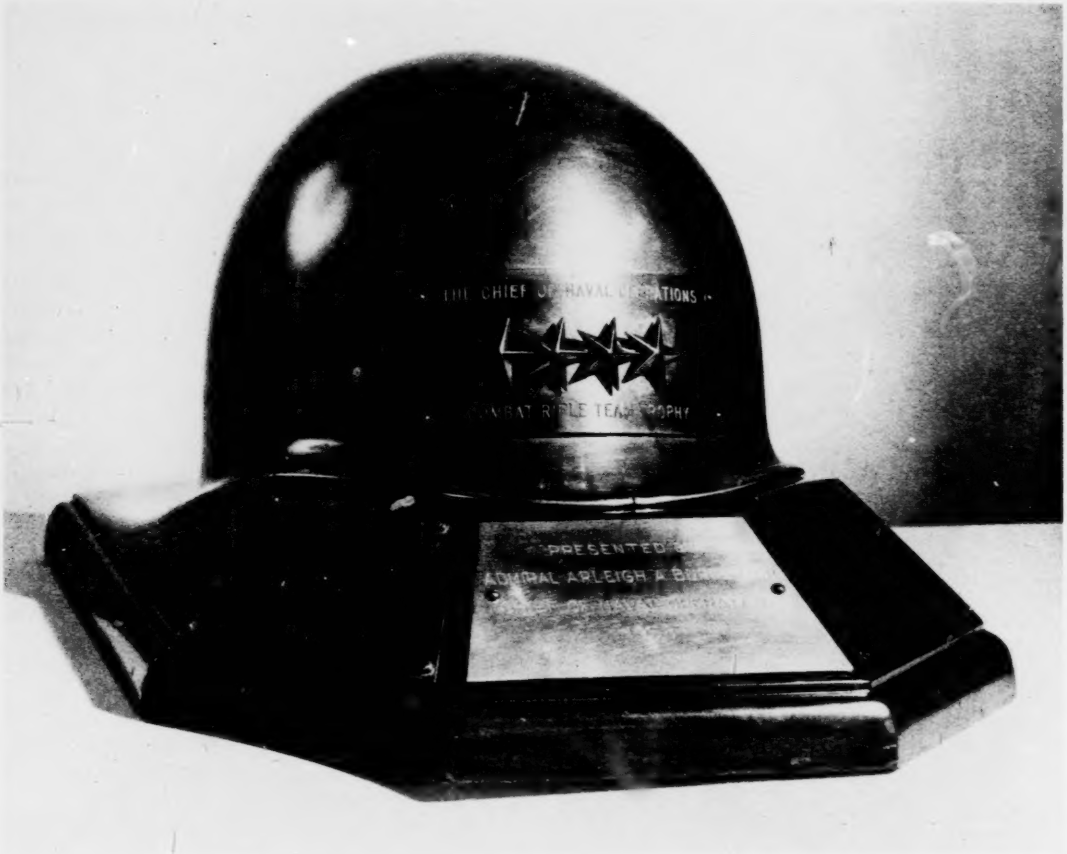


Figure 12-3.—Chief of Naval Operations Trophy.

as Distinguished Marksman/Pistol Shot will be awarded to the highest scoring 10% of all non-distinguished participants in recognized matches, ranked in order of merit as follows:

(1) To the highest scoring 1/6th (of the 10%)—Gold Badge—10 credit points.

(2) To the next highest scoring 1/3rd (of the 10%)—Silver Badge—8 credit points.

(3) To the remaining personnel (of the 10%)—Bronze Badge—6 credit points.

(4) Each non-distinguished individual will be authorized to compete for credit points in not more than 4 Excellence-in-Competition matches with the service rifle and 4 matches with the service pistol each calendar year.

b. Fractions of .5 and over will be resolved to the next highest whole number when determining the 10%. Smaller fractions will be dropped.

c. Matches recognized for award of Excellence-in-Competition Badges and credit points are:

(1) Atlantic/Pacific Fleet Competitions (Excellence-in-Competition Rifle Match and Excellence-in-Competition Pistol Match).

(2) All Navy Competitions (Excellence-in-Competition Rifle Match and Excellence-in Competition Pistol Match).

(3) Interservice Competitions (Excellence-in-Competition Rifle Match and Excellence-in-Competition Pistol Match).

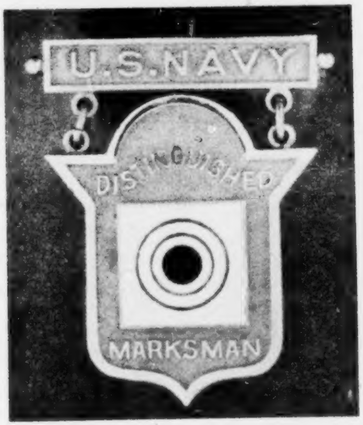


Figure 12-4.—U.S. Navy Distinguished Marksman Badge.

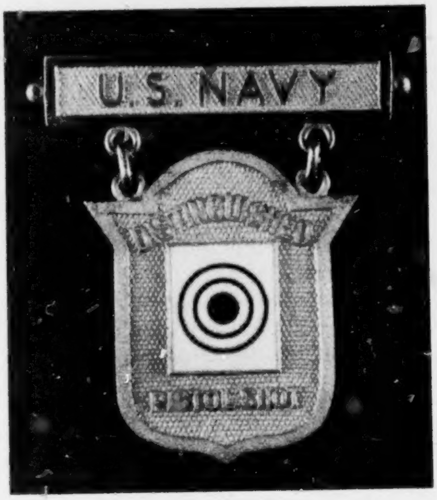


Figure 12-5.—U.S. Navy Distinguished Pistol Shot Badge.

(4) National Matches (National Trophy Individual Rifle Match and National Trophy Individual Pistol Match).

d. Navy personnel are expected to fire in Atlantic/Pacific Fleet Competitions. Personnel may be permitted to fire in Army Area, Marine Division, Air Force Major Command Matches (Excellence-in-Competition Rifle Match and the Excellence-in-Competition Pistol Match).

e. Credit points only will be awarded for participation and qualification in these matches. Navy personnel whose entry in Atlantic/Pacific Fleet Competition is restricted in any way must provide the Chief of Naval Personnel (Pers-C4) with a statement from their commanding officer, indicating that the individual concerned is authorized to compete in the other Service Excellence-in-Competition Match in lieu of the annual Fleet Competition. Justification to fire in other Service Excellence-in-Competition Matches in lieu of the Fleet Competition is considered to be emergency leave, hospitalization, attendance at service schools, ship deployment during the period of Fleet Competition or other essential military duty that physically precludes attendance at the Fleet Competitions. All statements will be forwarded via the individual's commanding officer.

Personnel choice of another service major command Excellence-in-Competition Match in lieu of the Fleet Competition will not be accepted as justification for competition. Naval personnel may compete in not more than one National Board for the Promotion of Rifle Practice (NBPRP) Excellence-in-Competition Regional Match per year (one for rifle and one for pistol) if 20 or more credit points have not been earned in Regional Matches and other Service Command Matches.

f. Excellence-in-Competition Badges are not awarded to Navy personnel competing in matches conducted by other services and the NBPRP. This is to encourage participation in the Fleet, All-Navy, Interservice and National Championships.

g. Upon receipt of notification of having qualified for credit points in a recognized match by the sponsoring Service or the NBPRP, the Chief of Naval Personnel will consider each case on its own merit and award or disallow credit points.

h. Courses of fire, weapons and ammunition for matches in which credit awards are authorized shall be in accordance with those prescribed in the current edition of Rules and Regulations for the National Matches (OPNAVINST 3590.7).

i. Non-distinguished personnel who hold "leg" credits for distinguished awarded prior to 1 January 1963 shall be credited with 10 points for each award not to exceed 20 points for each weapon.

j. Entry of non-distinguished personnel in Excellence-in-Competition Matches on a non-credit basis, or for practice, is not authorized.

k. Non-distinguished Navy competitors in NBPRP Excellence-in-Competition Matches at NRA Regionals must furnish the match sponsor with a statement that they have not earned the maximum credit points allowed (20 credit points).

12204. U.S. Navy Expert Rifle/Pistol Shot Medals

a. The highest achievement in the field of basic marksmanship in the Navy is the designation of Navy Expert Pistol Shot or Navy Expert Rifleman. One Expert Rifleman Medal and one Expert Pistol Shot Medal will be awarded to each officer and enlisted man who qualifies by firing the standard service rifle, pistol or revolver over one of the prescribed courses, and attains the qualification score prescribed. A medal is not issued to an individual who has received one for a previous qualification. A medal is not issued by the Navy for marksman or sharpshooter qualification.

b. The duration of qualification as Expert Rifleman or Expert Pistol Shot is two years. If an individual fires for record during this two year period and fails to requalify, he will cease to wear the expert medal. An individual who has successfully qualified for expert in three separate calendar years may wear the medal and the appropriate Navy Marksmanship Ribbon with the silver letter "E" attachment permanently and is no longer required to requalify.

12205. Qualification for Navy Rifle Marksmanship Ribbon and Navy Pistol Marksmanship Ribbon

a. The previously designated Navy Expert Rifleman Medal Ribbon and the Navy Expert Pistol Shot Medal Ribbon have been redesignated the Navy Rifle Marskmanship Ribbon and the Navy Pistol Marskmanship Ribbon, respectively. The revised regulations permit marksmen and sharpshooters to wear the marksmanship ribbons which formerly were only authorized for experts. The ribbon itself will identify a marksman qualification. The attachment of a bronze letter "S" will identify a sharpshooter. The attachment of a bronze letter "E" will identify an expert.

b. In accordance with the U.S. Navy and Marine Corps Awards Manual (SECNAVINST 1650.1D) one Navy Rifle Marskmanship Ribbon and one Navy Pistol Marskmanship Ribbon is authorized to be worn on the naval uniform of each officer and enlisted man who qualifies by firing the standard service small arms over one of the prescribed courses listed herein, and attains the qualification score prescribed for marksman, sharpshooter or expert.

c. All marksmanship ribbons and metal devices attached to the ribbons are purchased from the Navy Exchange. These ribbons are presently stocked in the Navy Exchange under their previous designation of Navy Expert Rifleman Medal Ribbon and Navy Expert Pistol Shot Medal Ribbon.

d. The duration of qualification as marksman, sharpshooter or expert is two years. If an individual fires for record during this two year period and fails to requalify for marksman, sharpshooter or expert he will cease to wear the ribbon.

12206. President's Hundred Award

The President's Hundred Awards for rifle and pistol are presented by the National Rifle Association of America to naval personnel who placed in a prescribed competition at the National Matches. See figures 12-6 and 12-7. These metallic brassards are authorized for wear on the naval uniform of enlisted personnel only.

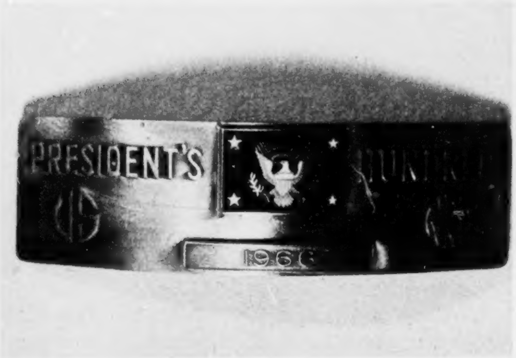


Figure 12-6.—President's Hundred Award—Rifle.

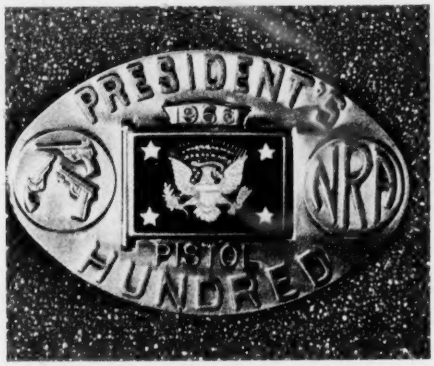


Figure 12-7.—President's Hundred Award—Pistol.

CHAPTER 13

NROTC TRAINING AND COMPETITION-IN-ARMS

SECTION I
TRAINING

13101. General

Naval Reserve Officer Training Corps (NROTC) midshipmen's small arms training is conducted during Summer Cruise.

SECTION II
COMPETITION-IN-ARMS

13201. General

Competition-in-arms for all NROTC Units consists of postal matches and shoulder to shoulder matches between other NROTC Units and colleges. Two of these competitions are conducted under the direction of the Chief of Naval Personnel. All Units are authorized .22 caliber pistols and rifles for competition-in-arms.

13202. Secretary of the Navy NROTC Rifle and Pistol Competition

a. Rules: Current National Rifle Association Smallbore Rifle and Pistol Rules will govern all firing except where amended herein.

b. Entries: Entries are made by returning the fired targets and score sheets indicating student's full name and the name of the NROTC Unit to the National Rifle Association. The NRA will determine the scores and standings of the teams and individuals in each match. The scores will not be determined by the official referee, a Navy or Marine Corps officer, as is the practice in the Society of American Military Engineers Rifle Match. All fired targets must be mailed to the NRA not later than 15 March 1970. All unfired targets will be mailed to the Chief of Naval Personnel (Pers-C4312).

c. Date of Firing: Each NROTC Unit may select its own date of firing during the period 1 Feb-15 Mar. However, once the record firing is started, all firing for the team must be completed within the prescribed NRA time limits.

d. Witness of Firing: The firing of the targets will be witnessed by the Navy or Marine Corps officer designated by the commanding officer as the official referee of the competition.

e. Range: Fifty feet from the firing line to the face of the target when placed in the firing position.

f. Teams: The teams will consist of five shooting members.

g. Individual Scores: The scores fired by the team members in the team event will be used to determine individual standings.

h. Eligibility: All duly enrolled regular, contract and NESEP students may participate in the competition.

i. Authorized Firearms:

(1) Rifle—Any .22 caliber rim fire rifle with no restrictions on trigger pull. The use of a palm rest is allowed. Metallic sights will be used (tube sight permitted).

(2) Pistol—Any .22 caliber pistol as prescribed in the current NRA rule book.

j. Course of Fire:

(1) Rifle—Prone Position—10 shots in 20 minutes, Kneeling Position—10 shots in 20 minutes, Standing Position—10 shots in 20 minutes.

(2) Pistol—Slow Fire (10 shots)—5 minutes will be allowed for each 5 shot string. Timed Fire (10 shots)—20 seconds will be allowed for each 5 shot string. Rapid Fire (10 shots)—10 seconds will be allowed for each 5 shot string.

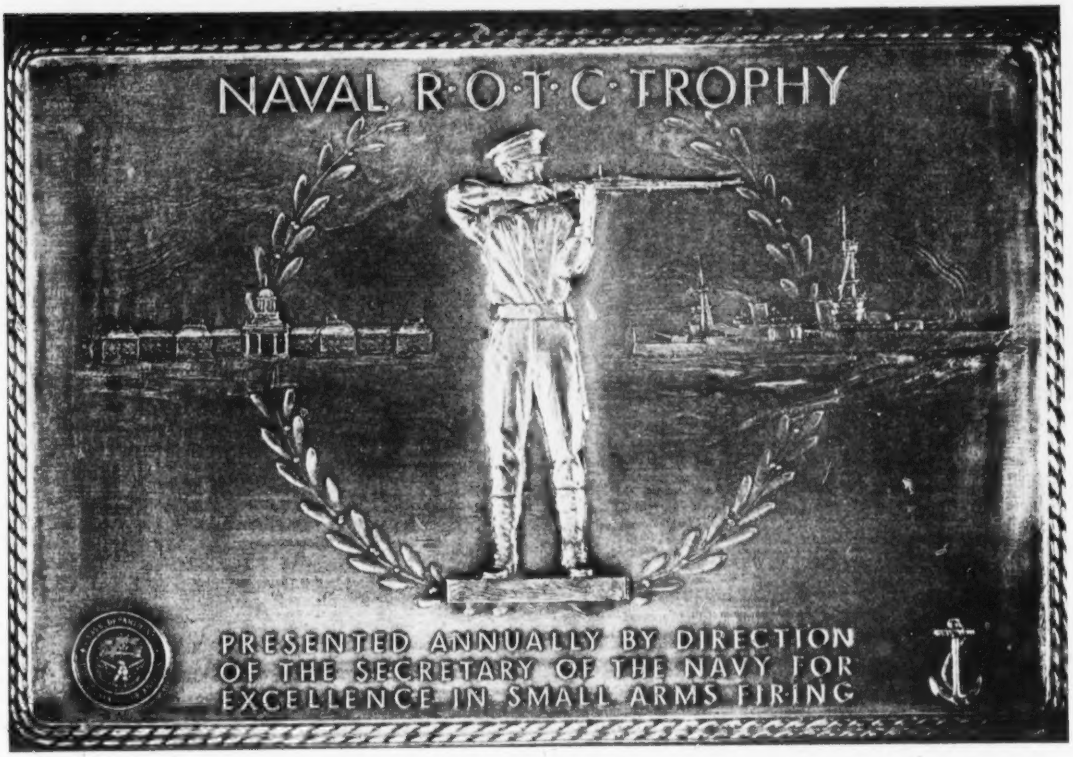

NAVAL R·O·T·C·TROPHY
PRESENTED ANNUALLY BY DIRECTION OF THE SECRETARY OF THE NAVY FOR EXCELLENCE IN SMALL ARMS FIRING

Figure 13-1.—Naval ROTC Rifle Trophy.

Each 5 shot string of slow, timed and rapid fire will be fired on one of the two slow fire targets, two timed fire targets and two rapid fire targets.

k. Awards: When the official scores and standings of the teams and individuals in each match have been determined by the NRA, the Chief of Naval Personnel will provide the awards to the winners prior to the end of their school year.

(1) The first, second and third place teams of both the rifle and pistol competition will be awarded to photo-plaque of the NROTC trophy, and each team member will be awarded a medal. See figures 13-1 and 13-2.

(2) The 10 highest scoring individuals of both the rifle and pistol competition will be awarded individual medals.

1. Results: An official letter showing the final results of the competition will be published and distributed to all NROTC Units by the Chief of Naval Personnel.

13203. Society of American Military Engineers Rifle Competition

a. Rules: Current "NRA Smallbore Rifle Rules" will govern all firing, except for time limitation permitted for firing on international type targets set forth in paragraph (k) of this program.

b. Entries: Entries are made by returning the fired targets and scores on the certified score sheet to the Chief of Naval Personnel (Pers-C4312). All fired targets must be mailed to the Chief of Naval Personnel not later than 16 March 1970. All unfired targets will also be returned, indicating the reason participation in the competition was not possible.

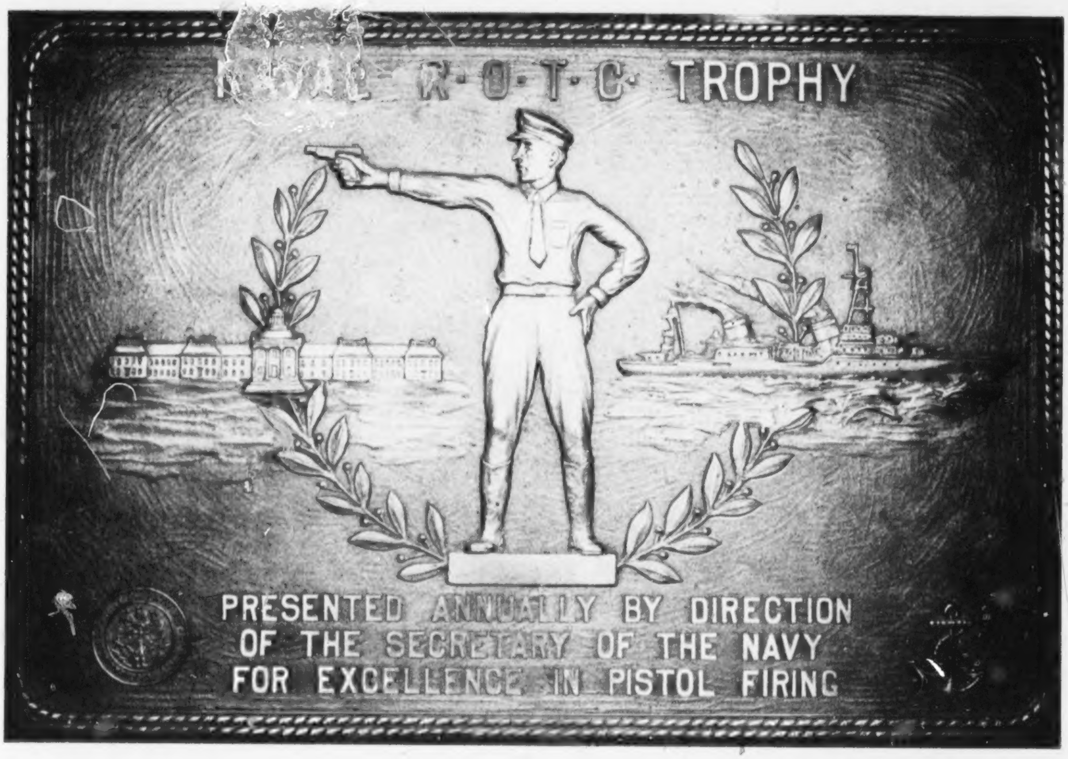

NAVAL R·O·T·C· TROPHY
PRESENTED ANNUALLY BY DIRECTION
OF THE SECRETARY OF THE NAVY
FOR EXCELLENCE IN PISTOL FIRING

Figure 13-2.—Naval ROTC Pistol Trophy.

c. Date of Firing: Each NROTC Unit may select its own date of firing during the period 1 Feb-15 Mar. However, once the record firing is started, all firing for the team must be completed within the prescribed time limits.

d. Witness of Firing: The firing of these targets will be witnessed by an official designated by the commanding officer as the referee and certifying officer of the competition.

e. Scoring: All targets will be scored by the official referee. Shot holes may be plugged. Hits on the wrong target or bull's-eye will be scored in accordance with section 14.7 of "NRA Smallbore Rifle Rules."

f. Range: Fifty feet from the firing line to the face of the target when placed in the firing position.

g. Teams: The team will consist of five shooting members. Each member must be pursuing a course which leads to an engineering degree.

h. Individual Scores: The scores fired by the team members in the team events will be used to determine individual standing.

i. Eligibility: All duly enrolled regular, contract and NESEP students may participate in the competition.

j. Authorized Firearms:

(1) Rifle—Any .22 caliber rim fire rifle with a trigger pull of not less than one pound. The use of palm rest is allowed. Metallic sights will be used (tube sight permitted).

k. Course of Fire:

(1) Rifle—Prone Position—10 shots in 20 minutes, Kneeling Position—10 shots in 20 minutes, Standing Position—10 shots in 20 minutes.

1. Awards: The Society will provide the awards to the winners.

(1) A rifle marksmanship trophy to the high team representing the Army or the Navy.

(2) A rifle marksmanship medal to each of the five members of the high team of each service.

(3) A rifle marksmanship medal to the five high marksmen of each service who are not members of their high service team.

m. Results: Upon verification of the scored targets, a report will be made by the Chief of Naval Personnel to the Society by 1 April.

APPENDIX I

THE NAVY SIMPLIFIED METHOD OF PISTOL INSTRUCTION

Title: Introduction to the Fundamentals of Pistol Shooting.

Objective: 60 min To teach the shooter how to have the pistol pointed at the area he wishes to hit when the weapon is discharged.

Materials: Target backer with Sight Alignment sketch.

Introduction: 15 min Introduce self, Chief Range Officer. Previous Results—Expected performance of current group.

Presentation: 45 min Some things we should know about ourselves and the pistol before we fire a shot.

1. Where does the pistol hit? (Establish firmly.)
2. Individual's habit — Target fixation—Must change lifetime habit.
3. Sight alignment — parallel error — Effect of shooting down a pipe. Angular error—Effect (fig. AI-1) of shooting down a funnel—Correct sight alignment—Any consistent alignment. Arbitrarily call a particular alignment the "correct" alignment—Ease of error detection. Eye open. See brass/muzzleflash.

Presentation:

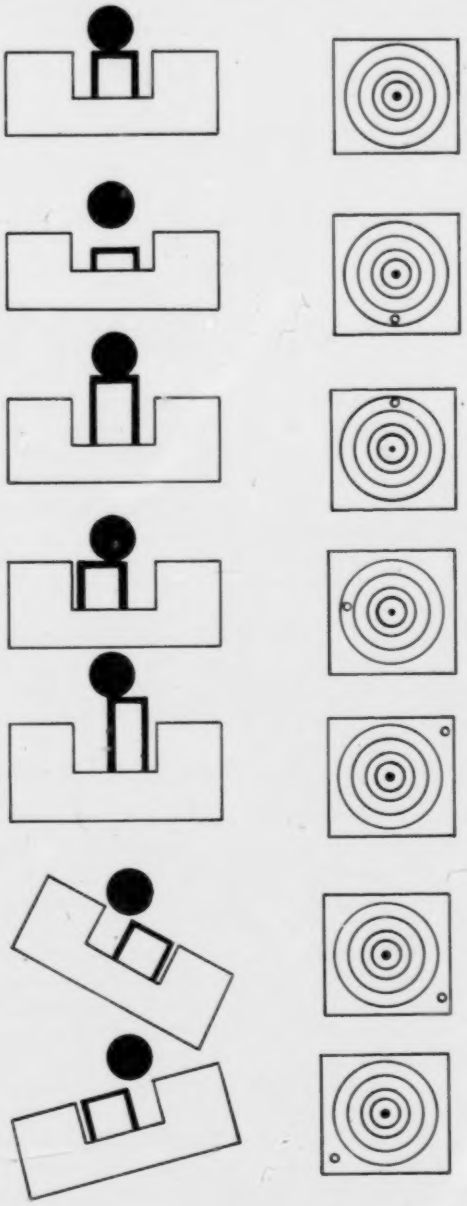
4. Trigger control—Ability to discharge weapon without disturbing the sight alignment.
5. Grip—Firm—How firm is firm? Group demonstration Wrists firm, Elbows firm.
6. Stance—Ready position commands.

10 min RANGE SAFETY

1. Waste of time to talk—Shooters tune out—Shooters will be practicing at all times.
2. Unloaded weapons kill "I didn't mean to do it." All weapons considered loaded at all times on the range.

Presentation:

3. No such thing as accidental discharge "Unintentional Discharge" Part of the program if individual practicing range safety.
4. Safety lock not used on range—Gives the shooter false sense of security.



PERFECT ALIGNMENT. TOP OF FRONT SIGHT LEVEL WITH THE TOP OF REAR. EQUAL LINE OF LIGHT ON EITHER SIDE OF FRONT SIGHT IN REAR SIGHT NOTCH. PERFECT SHOT.

FRONT SIGHT LOWER THAN TOP OF REAR, EQUAL LINE OF LIGHT ON EITHER SIDE OF FRONT SIGHT IN REAR SIGHT NOTCH. SHOT TOO LOW.

TOP OF FRONT SIGHT HIGHER THAN TOP OF REAR, EQUAL LINE OF LIGHT ON EITHER SIDE OF FRONT SIGHT IN REAR SIGHT NOTCH. SHOT TOO HIGH.

TOP OF FRONT SIGHT LEVEL WITH REAR, TOO MUCH LIGHT ON RIGHT SIDE OF FRONT SIGHT IN REAR SIGHT NOTCH. SHOT TO LEFT, 9 O'CLOCK.

TOP OF FRONT SIGHT HIGHER THAN TOP OF REAR. TOO MUCH LIGHT ON LEFT SIDE OF FRONT SIGHT IN REAR SIGHT NOTCH. SHOT HIGH AND RIGHT.

TOP OF FRONT SIGHT LEVEL WITH REAR, TOO MUCH LIGHT ON LEFT SIDE OF FRONT SIGHT IN REAR SIGHT NOTCH. PISTOL "CANTED", SHOT LOW AND RIGHT.

TOP OF FRONT SIGHT LEVEL WITH TOP OF REAR, TOO MUCH LIGHT ON RIGHT SIDE OF FRONT SIGHT IN REAR SIGHT NOTCH. PISTOL "CANTED", SHOT LOW AND LEFT.

Figure AI-1.—Angular Error Effect.

APPENDIX II

MARKSMANSHIP DICTIONARY

ABERRATION.—Imperfection in the image seen through an optical instrument.

ACCURACY.—Accuracy is the ability of a firearm and its ammunition to fire bullets into small groups at various ranges.

ACCURIZE.—To modify, rework and refine a weapon in order to improve the characteristics of the designed function and accuracy capabilities.

ACP.—Automatic Colt Pistol cartridge.

ACTION.—That part to which the barrel is attached. In a rifle it is often called the receiver. Shotgun or doublebarreled sections house all the mechanism or working parts. The term may be further modified as side action, breech-action, belt-action, snap-section, etc. It is also used to indicate the different forms of charging the weapon as bolt-action, lever-action, pump-action, etc.

ADAPTER.—An auxiliary chamber to fire small cartridges in a barrel of like caliber, but having a larger chamber. Adapters are made to conform to the outer walls of the chamber and reamed to fit the auxiliary cartridge.

ADJUSTABLE TRIGGER.—One that can be adjusted for weight of pull.

AGGREGATE.—The sum total of the scores from two or more matches. This may be an aggregate of match stages, individual matches, team matches, or both, provided the tournament program clearly states the matches which will compromise the aggregate.

AIM.—To point or direct a weapon that propels a projectile towards an object or spot with intent to hit it.

AIR GAUGE.—A mechanical device operated by air pressure used to precision measure inside and outside dimensions usually in 1/10,000th of an inch. Normally used to measure the diameter of lands and grooves of a barrel.

AIR GUN.—A weapon which utilizes air to propel the projectile.

AIR RESISTANCE.—See Ballistic Coefficient.

AIR SPACE.—Space within the cartridge not occupied by bullet, primer composition, or powder.

ALIBI.—A slang term used in competition to define an allowable refire.

ALINEMENT.—See Sight Alignment.

ALLOY.—A metal composed of two (2) or more metals and/or other ingredients mixed together while molten.

ALTERNATE.—An extra member of a competitive team, whose utilization is prescribed by match conditions.

ANEMOMETER.—Instrument which measures wind velocity.

ANGLE OF ELEVATION.—Angle made by the line of sight and the axis of the bore before firing.

ANNEAL.—To heat-treat metal to reduce its brittleness.

ANNODIZE.—To subject a metal to electrolytic action as the anode of a cell in order to coat it with a protective film of color.

ANSHULTZ.—A German company that produces standard and free rifles.

ANVIL.—A section of the primer against which the center of the primer cup is forced by the firing pin, thereby causing a crushing action which ignites the primer composition. See Primer.

APERTURE SIGHT.—A front or rear sight (primarily for a rifle) with a circular opening in the center. Interchangeable discs with holes of varying diameters may be inserted to control the sight picture in accordance with shooting conditions.

ARCHED HOUSING.—Referring to the mainspring housing of the .45 Colt pistol, a housing with the rear portion curved or humped where it contacts the palm of the hand.

ARMORY.—A place where arms and instruments of war are deposited; usually a designated space aboard ship, a large building including also a drill hall, offices, etc.

ARMOR-PIERCING.—A projectile designed for use against aircraft and vehicles. Normally has a hardened steel alloy core.

ARMS.—A term used to describe hand, shoulder and light automatic weapons.

ARSENAL.—An establishment, not usually public, for the manufacture, repair, storage, or issue of arms and all military equipments, whether for land or naval service.

ARTIFICIAL SUPPORT.—A competitive term describing any supporting surface not specifically authorized for a shooting position.

ASSEMBLY.—A number of collated parts assembled as a single unit; e.g., bolt assembly.

ASSEMBLY LINE.—The area to the rear of the firing line where competitors assemble prior to their relay being called to the ready line and the firing line.

AUTOLOADING.—Arms in which the force of the explosion of each shot is used to unlock the mechanism, extract and eject the empty shell, and to reload by stripping and feeding another cartridge from the magazine into the chamber. The trigger must be pressed for each successive shot.

AUTOMATIC.—Arms in which the force of the explosion of the first shot is used to continue the operation of unlocking, extraction, ejection, reloading, locking and firing continuously, as long as the ammunition lasts in the magazine, belt or strip, and the pressure on the trigger is continued. This name is commonly applied (erroneously) to autoloading repeating hand firearms.

AUXILIARY BARREL CHAMBER.—Same as Adapter.

AUXILIARY TUBE.—See Insert Barrel.

AVERAGE.—The overall performance rating of an individual in his ability to score with a particular type of weapon, determined after firing a definite number of preestablished rounds of matches. This figure is usually figured on a percentile basis and is used in establishing a classification. (See Classification in NRA Rule Books.)

AWARD.—Prize given to winning shooters or teams. For example, money, merchandise certificates, weapons, etc.

BACKING TARGETS.—A blank target placed to the rear of the scoring targets, to assist in identifying number of rounds fired and crossfires in precision shooting.

BACKLASH.—Play or movement in connected parts caused by looseness. 1. Continued rearward movement of the trigger after release of the hammer. 2. Sight adjustment screw motion without corresponding movement of the sight itself.

BACK STRAP.—The rear extension of a pistol or revolver frame which curves downward between the grips.

BACKSTOP.—A mound of earth, hill, or any other barrier, which will safely deflect, stop or absorb bullets.

B.A.R.—Abbreviation for Browning Automatic Rifle, a gas-operated military weapon invented by John M. Browning (1885-1926).

BAFFLES.—A structure of wood or other materials, used on the firing range, to deflect and/or absorb stray or ricochet bullets.

BALL AMMUNITION.—Small arms cartridges with a general purpose, solid core bullet intended for use against personnel and material targets not otherwise requiring armor piercing, or other special ammunition.

BALLISTIC COEFFICIENT.—Referred to as the value of C. Measures ability of a projectile to overcome air resistance; varies directly as to weight and indirectly as to form for any given bullet diameter. Thus, the greater the value of C, the greater the ability of a bullet to combat air resistance. Value of C may be increased by either or both of two methods; increasing bullet weight and improving its shape. C equals sectional density divided by coefficient of form.

BALLISTICS.—The science of moving projectiles. Composed of three divisions: internal, external, and terminal.

BALL POWDER.—A military gunpowder which takes the form of uniform balls of powder instead of loose grains. Developed during World War II by Western Cartridge Company.

BANDOLEER.—A beltlike cloth, or other material, with compartments designed for

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carrying ammunition, worn suspended over one shoulder, across the chest, and under the arm.

BANK OF TARGETS.—A group of targets operating together on the same firing line.

BARREL.—Metal tube containing the chamber and bore of a firearm.

BARREL BAND.—Binds barrel and forearm together, holding the barrel in the forearm groove. An adjustable barrel band is a means of varying the tension between the two parts, accomplished by rotating a screw which passes through the forearm and into a bolt attached to the band.

BARREL FITTING.—The joining of an action with a bored and chambered barrel, done in such manner as to leave the correct amount of headspace between chamber and bolt face.

BARREL LUG.—A projection integral with the barrel used to secure the magazine, forearm, or some moveable part to the barrel.

BARREL WHIP.—Movement of the barrel during the process of firing. These movements are transmitted to the barrel by the forces of the propelling gas, and the kinetic energy developed by the projectile.

BASE.—Rear end of projectile or bullet; surface at which the boat tail (if any) terminates. Also the rear end (head) of a cartridge or shell.

BASE WAD.—Compressed paper filler which keeps the powder in position ahead of the flashing end of the shotgun shell primer. See Cup Wad.

BATTERY CUP.—A primer housing used in shotshell reloading.

BATTLE SIGHTS.—A predetermined sight setting that, carried on a weapon, will enable the firer to engage targets effectively at battle ranges when conditions do not permit exact sight settings.

BB.—See Caps.

BEAD.—A small knob of metal on a firearm near the muzzle used for a front sight in aiming.

BEARING SURFACE.—The portion of a bullet's circumference which contacts the bore and receives the rifling impression.

BEAVERTAIL.—A forearm for rifle or shotgun made wider, and usually flatter on the underside, than standard; its width exceeds its depth. Semibeavertail is a cross between a normal forearm and full beavertail.

BEDDING.—An epoxy resin (glass) used to insure better fit between the rifle barrel and action to the wood in the gunstock. Also used to strengthen the recoil mortise in the gunstock.

BELTED CARTRIDGE.—One with a narrow band which circumscribes the base, just ahead of the cannelure, to govern headspace.

BENCH REST.—A specially constructed shooting bench at which the shooter sits to support his elbows and the gun barrel. Bench rest shooting is concerned with firing as small groups as possible at a target over measure distances and with any type of rifle and cartridge best adapted to superaccurate performance.

BENCH REST SHOOTING.—(a) Shooting from a bench rest (See Bench Rest). (b) A type of sport or competition shooting, where an attempt is made to fire a number of shots into the smallest possible group. The ultimate aim being to have all shots of one group, in one bullet hole. There are practically no restrictions as to weapon caliber, design, shape, size, weight, etc. The goals of organized bench rest shooters are the development and encouragement of extreme accuracy in rifles, ammunition, equipment, and shooting methods.

BEND.—The drop below the line of sight at the comb and heel of a shotgun or rifle butt-stock. This term is largely used by the British rifle and shotgun makers.

BERDAN PRIMER.—Anvil is integral with the case. Developed about 1870 by Col. Berdan of U. S. Ordnance Dept.; not currently prevalent in the U. S. though popular in foreign countries. See Boxer Type Primer.

BIATHOLON.—An event combining a cross-country race on skis and firing a rifle at various distances. This event was included in the 1960 Olympic Winter Games.

BIG BORE.—Generally anything larger than .25 caliber as applied to rifles; specifically, .30 caliber target shooting. Also applied to 10 and 12 gauge shotguns. See Small Bore.

BINOCULAR VISION.—Sighting with both eyes open.

BIPOD.—A two-legged stand or mount; i.e., a stand for spotting scope; mount for mortar or automatic weapon.

BIRD.—A clay target used in skeet or trap shooting. Dead bird is one ruled by the referee as having been hit. Lost bird is a miss, designated by the referee as lost. No bird is one at which the contestant does not shoot (such as a target which emerges from the trap broken) because under the rules he is entitled to another bird.

BLACK POWDER.—The forerunner of smokeless powder; a mechanical mixture of charcoal, saltpeter and sulphur.

BLACKEN SIGHTS.—To apply soot or any black substance to sights in order to eliminate glare. Common method is to use a carbide lamp allowing flame to deposit carbon on front and rear sights.

BLACKING.—Carbon or paint used on sights to eliminate glare.

BLADE SIGHT.—A metal blade, attached to the upper side of the barrel near the muzzle.

BLANK CARTRIDGE.—A cartridge having, in place of a projectile, a paper cup or wadding in the mouth of the case.

BLOCK OFFICER.—(See Range Officers.)

BLOWBACK.—(a) Escape, to the rear and under pressure, of gases formed during the firing of the gun. Blowback may be caused by a defective breech mechanism, a ruptured cartridge case or a faulty primer. (b) Type of weapon operation in which the force of expanding gases acting to the rear against the face of the bolt furnishes all the energy required to initiate the complete cycle of operation of the gun. A weapon which employs this method of operation is characterized by the absence of any breech lock or bolt lock mechanism.

BLOW FORWARD.—A type of automatic action in which the barrel is blown forward and then returns against the standing breech by spring pull, reloading and cocking taking place during the return movement.

BLOW PATTERN.—Unequal distribution of shot from a fired shell resulting in large open spaces in the general pattern, or with the center quire sparse in comparison with the rim.

BLOWN PRIMER.—Primer that has ruptured or unseated itself in the cartridge. May be due to excessive pressure, defective primer, improper firing pin length, or brass case improperly annealed (soft-brass).

BLUING.—Rusting metal by artificial oxidation to form a protective coating.

BOAT-TAIL.—The tapered rear end of a bullet designed to increase ballistic efficiency at long range.

BOBBER.—A bobbing target, usually a body silhouette, exposed to view unexpectedly and for a short time by remote control.

BOIL.—The appearance of an upward, boiling-like motion of mirage, when not affected by wind shift.

BOLT.—A sliding mechanism that closes the breech in some types of small arms. It usually contains the extractor and firing pin, and supports the base of the cartridge case.

BOLT ACTION.—A rifle and shotgun mechanism whereby the breech is opened and closed by a manually operated bolt which travels back and forth in the receiver on a direct line with chamber and barrel. 1. Turning bolt—locking lugs are turned to lock the action. 2. Straight pull—locking lugs actuated by bolt studs which slide in grooves cut into the bolt cylinder.

BOLT FACE.—That portion of the bolt that engages and supports the head of the cartridge.

BOLT HANDLE.—A projection from the bolt sleeve or body by which the bolt is manually manipulated.

BOLT HEAD.—The rear portion of the bolt which in bolt action guns, projects beyond the bolt sleeve when the bolt is closed.

BOLT SLEEVE.—A metal tube containing the bolt and to which the bolt handle is affixed; or, in some bolt action rifles, a part threaded into the rear of the bolt to guide the striker and retain the mainspring.

BOLT STOP.—A pin or lever which prevents removal of the bolt from the action unless expressly desired.

BONE SUPPORT.—The position the firer assumes that allows him to use his bones to support the weight of the weapon and use his muscles principally to hold his bones in their supporting position. This means that he can keep his muscles relaxed and avoid the tremors that develop from strain and tension.

BORE.—(a) The interior of the barrel through which the charge or bullet passes. (b) The diameter measured from land to land.

BORE SIGHTING.—Zeroing metallic or scope sights by sighting the target throughout the bore.

BOTTLE NECK.—A cartridge case whose neck diameter is smaller than its base.

BOX MAGAZINE.—A box-like metal container for holding cartridges that are fed into the chamber by the action of the gun after the magazine is inserted into the magazine well; extracted manually, usually by a release catch. Strictly speaking, not a clip.

BOXER PRIMER.—A center primer favored in the United States. It is a completely self-contained unit whose anvil is a small metal cone inside the primer cup.

BRASS.—Empty cartridge cases.

BREATH CONTROL.—To exercise proper control of the breath during the aiming and firing process, in such a manner as to minimize disturbance of sight alinement and sight picture.

BREECH.—The rear end of the barrel into which the cartridge is inserted.

BREECHLOCK.—A metal block, against which the cartridge rests, closing the rear of the bore against the discharge. Also called breech bolt.

BRENNEKE SLUG.—The original German rifled shotgun slug.

BRIDGE.—Metal arch connecting both sides of receiver.

BRIDGE MOUNT.—A variation of the telescopic top mount designed to span the loading port of bolt action rifles.

BROACHING.—A method of rifling the grooves of a barrel simultaneously with a broach, a tool with a series of cutting teeth.

BROKEN TARGET.—In clay target shooting a bird which the referee rules has been broken and thus is scored in favor of the contestant. A chipped target (one with a perceptible piece knocked off) is scored as a broken target. Dusted target is a miss that was struck by the shot, as evidenced by the dust arising behind it, but not broken. A powdered target has been decisively broken into small pieces. High target is one that is higher than the regulation trajectory in clay target shooting. Low target is lower than regulation. An illegal target is one outside of the area prescribed by the rules. Regulation target is used specifically in trapshooting to mean 16 yard targets but in general refers to a target within the prescribed limits of trap and skeet rules.

BUCKSHOT.—Large size lead shot for use in shotgun shells. Commercially manufactured in five sizes with the following designations and diameters: No. 00 (.33"); No. 0 (.32"); No. 1 (.30"); No. 3 (.25"); No. 4 (.24").

BUFFER.—A part which absorbs shock or recoil.

BULL GUN.—Target rifle equipped with an extremely heavy barrel.

BULL PUP.—A shortened rifle with barrel and action of normal length but restocked in such a manner that its metal parts extend almost to the end of the stock, or a reduction in length approximately equal to the distance between trigger guard and butt plate. J. R. Buhmiller of Eureka, Montana, claims to have made the first one in 1937 "for personal use as a 1,000 yard Wimbledon match gun."

BULLET.—Small arms projectile normally fired from a rifled barrel.

BULLET BASE.—Rearmost end of the bullet.

BULLET DROP.—The vertical drop of a bullet due to gravity.

BULLET GAUGE.—Gauges normally used to measure the diameter and concentricity of a bullet.

BULLET MOLD.—A form in which bullets are cast by pouring molten lead or alloy into it through a sprue hold in the top. The mold itself is made of two matched halves of steel cut to bullet diameter and shape by a cherry and held together by separating the two halves.

BULLET PROFILE.—Shape of bullet from base to nose.

BULLET PULLER.—Device used to remove bullet from cartridge case.

BULLET TRACE.—The visible path of a bullet passing through the atmosphere which can be best seen through properly adjusted optical aids.

BULL'S-EYE.—(a) The center of a target; also a shot which hits it; hence, any successful hit. (b) The blackened area of a target. (c) A trade name for a commercially manufactured pistol powder.

BUSHING.—A metal lining. To bush is to furnish with a metal lining.

BUTT.—The shoulder end of a gunstock; the bottom of a revolver or pistol grip. Loosely used to indicate the complete butt stock of a rifle and shotgun, or the grip of a handgun.

BUTT PLATE.—Metal, plastic, or rubber covering for the rear edge of a gunstock; usually corrugated to prevent slipping from the shoulder. On free rifles, butt plates are usually adjustable for vertical movement and may have extension prongs which fit under and/or over the shoulder.

BUTTS.—The entire individual target end of a rifle range.

BUTT STOCK.—The non-metallic portion of a shoulder arms extending backwards from the receiver.

BROWNING (OXIDATION).—An oxidation produced and retained on the surface of gun-barrels by means of acid to prevent further oxidation or rust.

CALIBER.—Bore diameter of a rifle or handgun measured from one land to the opposite land, or the diameter before rifling; designated in fractions of an inch or millimeters, although a stated caliber may not be an exact figure. Black powder calibers, such as .45-70-405, mean .45" diameter, 70 the weight of the powder charge, and 405 the weight of the bullet in grains; many of these old designations were incorporated into modern smokeless powder nomenclature, but the second figure is meaningless. Designations such as .250-3000 refer to caliber and muzzle velocity; 8 mm. x 56 refer to caliber and case length (in millimeters).

CALL.—The ability of the shooter to determine the approximate location of his hit on the target through noting the position of the sights at the instant of firing.

CAM.—A rotating or sliding projection which either imparts or receives a desired motion to, or from, a counteracting part, such as a roller, pin, etc. Thus, a camming action.

CANNELURE.—A groove in a bullet for containing a lubricant or into which the cartridge case is crimped; a groove in a cartridge case providing a purchase for the extractor.

CANT.—Tilt of a barrel to the right or left while sighting; failure to hold the sights exactly vertical on the target. Effect of cant: bullet strikes to right of point of aim if barrel is tilted to the left, and vice versa.

CAPS.—Lowest powered .22 caliber rim fire ammunition. Two types: BB for Bullet Breech; CB for Conical Bullet. Developed about 1850, the first .22 rim fire cartridges and the earliest American cartridge to contain its own primer.

CARBIDE.—A chemical whose reaction when mixed with water, produces an acetylene gas.

CARBIDE LAMP.—A miners-type lamp whose flame is used to put soot (carbon) deposits on sighting equipment for purposes of reducing glare.

CARBINE.—A sporting or military rifle that has a shorter barrel (22" or less) and consequently is lighter in weight than the average weapon.

CARRIER BLOCK.—That part of a weapon which lifts a round from the magazine and lines it up with the chamber. Usually found in pump and automatic shotguns, and some styles of rifles.

CARTRIDGE.—A complete round of ammunition containing bullet, powder, case and primer.

CARTRIDGE CASE.—Usually a brass or steel tube used to house bullet, powder and primer.

CASE BULLET.—A bullet formed by pouring molten metal into a mold.

CASE CAPACITY.—Total volume of case and primer in absence of bullet, powder, and priming composition. Usually expressed in cubic units or in terms of weight of water which it will contain.

CASE FORMING.—Resizing the cartridge case to a specified size and shape by the use of a resizing die.

CASE GAUGE.—An instrument used to measure the case length against a standard.

CASE HARDENING.—The process used to harden the surface of metal while leaving the core soft.

CASE TRIMMING.—A method of shortening a cartridge case to a specified length.

CAST-OFF.—The distance the stock is offset at the heel to the left or right, from a straight line with the axis of bore. It is called cast-on when to the left, and cast off when to the right.

CAST-ON.—(See Cast-Off.)

CEASE FIRE.—The command given to cause all firing to stop immediately.

CENTER.—Slang term used to denote a hit in the center of a target.

CENTER FIRE.—A form of cartridge case in which the primer is placed directly in the center of the base.

CHALLENGE.—When a competitor feels that a shot fired by himself or by another competitor has been improperly evaluated or scored, he may challenge the scoring. Such challenge must be made immediately upon announcement of the score.

CHAMBER.—The compartment at the rear of a gun barrel that holds a charge or cartridge; one of the compartments in the cylinder of a revolver. To insert a round of ammunition in the chamber of a firearm.

CHAMBER PRESSURE.—Pressure created by the rapid burning of a propellant (powder) within the chamber of a weapon, during the instant of firing.

CHAMFER.—To bevel. Chamfering a cartridge case means beveling the inside of its mouth by cutting or rolling the edge.

CHARGE.—A given quantity of explosive. The propellant for a bullet or shell. To charge a gun, to operate the bolt so as to chamber a round of ammunition.

CHECKERING.—Diamond shaped, regularly spaced cuts which form distinctive patterns on the gunstock grip and forearm. Performed by hand, with a checkering tool, or by machine.

CHEEK PIECE.—A projection on the side of buttstock comb on which the shooter rests his cheek while aiming the gun.

CHERRY.—A fluted tool which cuts the bullet cavity in a bullet mold.

CHIEF RANGE OFFICER.—Will have full charge of the range and pits and will conduct the matches on the schedule approved by the executive officer. He is responsible for range safety, and for enforcing all match rules.

CHOKE.—Constriction at the muzzle end of a shotgun barrel which controls shot pattern; the difference between bore and parallel diameters, expressed in thousandths of an inch, or points. The wider the pattern desired, the less the amount of choke required—and conversely. Degree of choke is measured by approximate percentage of pellets in a load striking within a 30" circle at 40 yards.

CHRONOGRAPH.—An Electric or electronic device for recording a projectile's time of flight, from which velocities are computed.

CLASSIFICATION.—The average scores of an individual, with a particular weapon, in match conditions, that are used to permit competition between individuals that have similar or equal abilities; attempting to eliminate unfair advantages of one person over another, by predicted performance. In NRA matches some classifications used are MASTER, EXPERT, SHARPSHOOTER, MARKSMAN.

CLAY BIRD.—A brittle disc which shatters when struck by shotgun pellets. Released by hand, or by mechanical or electrical traps, as a means of shotgun target practice, or in shooting trap or skeet. Same as clay target or pigeon.

CLEAN TARGET.—When all shots have gone into the highest numerical scoring ring or rings.

CLEANING ROD.—A rod with various attachments used in cleaning the bore of a weapon.

CLEAR.—Term is used to describe the act of removing all ammunition from the weapon to make it safe.

CLIP.—(Cartridge Clip.) 1. An open top and bottom metal container for cartridges that is pressed into the magazine well. Cartridges are fed from it to the chamber by the loading mechanism: automatic ejection of the clip follows feeding of the last cartridge (Mannlicher clip). 2. Mauser type clip (charger) is a metal band which holds the cartridges for stripping into the magazine from the top by manual pressure. This type clip does not remain in the magazine but is either removed before firing or ejected by the closing of the bolt. See box magazine (mistakenly called a clip) and revolver clip.

CLIP SLOT.—A pair of guide grooves milled into the forward end of a rifle receiver bridge so as to hold a clip in position for loading.

COACH.—Shooting trainer or instructor. A member of a team responsible for assisting the shooters.

COACH AND PUPIL.—A method of instruction where two people work together as teacher and student, and the roles may be reversed. This allows both persons to become familiar with instructional methods, and of identifying errors in the student.

COACHING SCOPE.—The telescope used on the firing line by the coach to direct or correct the shooter firing.

COATED LENS.—Magnesium floride coating on an optical surface to increase light transmission and improve contrast of image.

COCK.—To draw the hammer or cocking piece back into firing position, either manually or by pressure on the trigger; also, to set the trigger for firing. In a half cock position, the hammer or cocking piece is partially retracted but mechanically prevented from contacting the firing pin.

COCKING PIECE.—The rear projection of the striker; in some bolt action rifles it may be independent of the bolt, thus requiring a separate manual operation to cock the rifle.

COMB.—Top edge of the buttstock. A fluted comb has a rounded groove extending diagonally rearward for a short distance from the front of the comb at the small of the stock.

COMBINATION GUN.—A three-barreled gun, two of the barrels side by side and the third centered underneath. See Drilling. Usually has a combination of smoothbore and rifled barrels.

COMMENCE FIRING.—Command given to cause shooter to start firing a prescribed course of fire.

COMPENSATOR.—A device used on barrel of a weapon to reduce recoil.

COMPETITION-IN-ARMS.—Any test or trial of ability in the use of small arms where a prize is offered.

COMPETITOR.—An individual actively engaged in firing a weapon under match supervision. In a particular club, organization, or match, eligibility or status of a competitor is usually outlined in the match program.

COMPONENT.—A constituent part of a whole, especially one having no function apart from the whole. Such as, cartridge components (primer, powder, projectile).

CONE.—The angle cut in the breech end of a barrel to allow the bolt to be breeched tighter and therefore, keep as much of the brass case in the chamber as possible.

CONTROLLED EXPANSION.—A bullet whose expanding qualities are controlled by an additional soft metal tip over the lead core which permits entrance of the bullet to a certain depth within animal tissue before complete expansion takes place.

CONVERSION UNIT.—An assembly which permits firing of a smaller caliber cartridge than the one for which the weapon was originally designed.

COOK-OFF.—Unexpected discharge of a cartridge due to intense barrel heat; uncommon except in fully automatic arms.

CORDITE.—An early double base smokeless powder, formed by absorbing nitroglycerine in guncotton, adding a small percentage of vaseline, and extruding the mixture through a die into long strings or cords.

CORE.—The internal part of a bullet, that which is covered by the jacket.

CORROSION.—Chemical attack of metals resulting in removal of the part attached.

COURSE OF FIRE.—Prescribed positions, number of shots, distance, and time.

CREEP.—Trigger movement prior to sear release.

CRIMP.—To mechanically fold inward the mouth of a cartridge case about the base of the bullet, sealing it in place.

CRIMPED PRIMER.—A center fire primer not only friction-held by the primer jacket, but also held by crimping the primer jacket lip over the edge of the primer; a military practice.

CRITCHFIELD.—A course of fire used in small bore competition.

CROSS BOLT.—A movable, locking bar at right angles to the bore, which either locks or strengthens the locking mechanism of a closed breech, usually that of a break open type shotgun. Some bolt action guns may use a cross bolt to lock the bolt in an open position.

CROSS FIRE.—Two or more intersecting lines of gunfire. In competitive shooting, when a competitor fires on a target other than his own.

CROSS HAIR.—Type of reticle used in telescopic sights.

CROWN.—The angled cut made at the muzzle end of a barrel to eliminate burrs.

CUFF SLING.—A rifle sling, used with the rifle and one arm, as an auxiliary to steady the rifle. Usually made of leather, one or more pieces, may be padded, may strap on or hook on. Gives more comfortable support than the military type sling, when on the arm for long periods of time.

CUPRONICKEL.—Copper and nickle alloy. Cupronickel jackets often are used to encase a lear or alloy bullet.

CUTOFF.—A device employed on some bolt action rifles (e.g., Springfield '03) which has three positions, one allowing bolt manipulation without follower interference when unloaded, another bolt removal, and the third for normal bolt movement when loaded.

CYCLE RATE.—The rate at which a succession of movements repeats itself, applied to the rate of fire of an automatic weapon.

CYLINDER.—1. True diameter of the bore of a shotgun barrel, hence without any degree of choke. Delivers a 25% to 35% shot charge pattern. See Choke. 2. A round steel block, the inside of which is bored with multiple chambers for holding cartridges. Used as the loading device for revolvers; formerly in some types of rifles (notably Colt) but now obsolete.

DAMASCUS BARREL.—Shotgun barrel of alternate strips of welded iron and steel; made for black powder shells-unsafe for use with modern shells. Also known as twist or laminated barrels.

DANGER ZONE.—Any area forward of the firing line.

DCM (DIRECTOR OF CIVILIAN MARKSMANSHIP).—General—Section 4307, Title 10, U. S. Code, authorizes the Secretary of the Army to appoint an officer of the Army or Marine Corps as Director of Civilian Marksmanship (DCM). The Office of the Director is the implementing agency for the National Board for the Promotion of Rifle Practice. The Director of Civilian Marksmanship is responsible for implementing the policies established by the Board as approved by the President for the Secretary of the Army.

DEAD ROD.—A slang term applied to operating rod on M-1 rifle, when rod is out of adjustment, or without spring back.

DECAPPING.—The act of removing a primer, live or fired, from a cartridge. A rod known as a decapping pin is inserted through the mouth of the case to effect removal.

DEGRESSIVE POWDER.—A propellant whose surface area and rate of evolution of gas decreases as the powder burns.

DEWAR COURSE.—In small bore rifle shooting, a two-stage course of fire. It consists of twenty shots at fifty yards and twenty shots at 100 yards on standard American targets for the respective distance. Courses may be fired with either scope or metallic sights, in accordance with the match program.

DIE.—A tool used to cut, stamp, or form metal by pressure.

DISABLED WEAPON.—An NRA competitive rule term used to signify a weapon which cannot be safely aimed or fired because of loss or damage to sights or mechanical failure.

DISASSEMBLE.—To take apart.

DISQUALIFY.—The act of making a competitor ineligible for further participation for reasons of safety or infringement of match rules or regulations.

DISTINGUISHED BADGE.—These badges are awarded to qualified personnel to provide an incentive to greater training effort and as tangible public evidence of recognition for the attainment of an eminent degree of marksmanship skill with the service rifle and pistol. The Distinguished Badge will be awarded to a member after 30 credit points have been awarded to him.

DOPING.—The process of figuring by guess or estimate the adjustments or compensations necessary to sight a gun to point of aim.

DOUBLE.—1. Usually designates a double barreled shotgun. 2. Two holes in a paper target which almost appear to have been made by one shot instead of two.

DOUBLE BASE POWDER.—A nitrocellulose smokeless powder mixed with up to 40% nitroglycerin.

DOUBLE RIFLE.—A non-repeating gun with two separate rifled barrels, usually side by side, each barrel capable of firing one shot without reloading.

DOUBLE SET TRIGGER.—A unit of two triggers, one in front of the other which provides a two-stage hammer fall that improves speed and delicacy of firing. Release of one trigger, usually the rear, sets the other on a very fine sear that can be released in turn by a light touch.

DOUBLING.—The unintentional firing of two shots simultaneously (as in double barreled gun) or in succession with a single trigger pull through malfunctioning of the mechanism.

DOVETAIL.—A metal block with a wedge-shaped cross section for inserting metallic sights. Attached to the barrel or top of receiver by screws or dovetailing the base of the block into the metal. 3/8" is the standard size.

DRAM.—Unit of weight. 1/16 oz., or 256 drams to 1 lb. avoirdupois. Three drams of black powder (formerly the standard shotgun charge) equals 82 grains (27.34 gr. to a dram). Abbreviation: dr.

DRAM EQUIVALENT (DR. EQUIV.).—Since a smaller weight of the more powerful smokeless powder is needed to create any given muzzle velocity obtainable with black powder, the powder content of a modern shotshell is designated in terms of equivalence to the dram weight of black powder.

DRIFT.—Deviation of a projectile from the plane of departure due to its rotation. See Bullet Deflection.

DRILLING.—A combination shotgun and rifle formerly made in Germany, usually with two shotgun barrels side by side and a rifled barrel centered underneath.

DROP.—The vertical drop of a projectile. Distance measured from the line of sight to the top of heel and comb of a gun stock.

DROP BLOCK ACTION.—Lever operated breechblock which moves vertically in receiver side wall grooves.

DRY FIRE.—Practice with an unloaded firearm. Same as dry shooting or snapping in.

DUD.—A cartridge that has failed to function.

DUMMY CARTRIDGE.—A cartridge without powder or primer.

EAR PLUG.—Device used to protect the ear from damage caused by the sound of weapons firing.

EARLY SHOT.—A term used in competitive shooting, to identify a round fired before the command "Commence Firing" has been given.

EFFECTIVE RANGE.—The distance at which a weapon can be used by the average man to place hits in the kill area of a target.

EJECTION.—The process where a case or cartridge is being thrown from the weapon by the ejector.

EJECTOR.—A part in a firearm for throwing out shells or cartridges.

ELBOW PAD.—A cushion for the elbow usually attached to the shooting jacket or coat.

ELECTRIC FURNACE.—A melting pot used to heat lead alloy used for casting.

ELECTRIC TRAP.—A device used in either sheet or trap shooting to throw the clay target into the air.

ELEVATED RIB.—The raised sighting plane placed on top of the barrels of a shotgun or rifle.

EXCELLENCE-IN-COMPETITION BADGE.—A place medal awarded in matches designated as allowing credit points toward the award of a distinguished badge.

EXTENDED FRONT SIGHT.—A bar of steel or extension of front sight to increase sight radius.

EXTRACTION.—The process of removing a live or spent shell or cartridge case from the chamber.

EXTRACTOR.—A part in a gun for removing shells or cartridges from the chamber.

EYE RELIEF.—Distance from the aiming eye to the rear sight.

FAMILIARIZATION.—Applied to an individual who fails to fire a qualifying score, of marksman or higher, when firing for record over a qualifying course. Indicates individual is safe to handle and carry a weapon in the performance of his duty, but has not met the minimum marksmanship standard.

FAMILIARIZATION FIRING.—Practice firing with a weapon.

FEEDING.—The process of driving live cartridges from the magazine into the path of the bolt or slide prior to chambering.

FEED RAMP.—A slanted metal surface at the rear of a barrel which guides cartridges into the chamber during feeding.

FEET PER SECOND (FPS).—A unit of measure usually used to indicate the velocity of a bullet.

FIELD OF VIEW.—A measure of the diameter of the field of vision which the observer can see at one time while looking through the telescope.

FIELD STRIP.—To disassemble the major components of a machine gun, cannon, or other fire arm for cleaning, inspection, or the like.

FINAL BULLETIN.—A competitive term to denote the final score of each match fired, which has been posted for public view, after having been checked for accuracy, and each competitor has had the opportunity to challenge the accuracy of the posted score.

FIRE FASTER.—A rifle coaching term used when the coach desires to accelerate the competitors rate of fire.

FIRE FORM.—To shape a cartridge case by firing it in a large chamber. The exploding gases expand the case and cause it to form to the diameter and shape of the chamber.

FIRING LINE.—A line at which men are stationed for firing; the men stationed at such a line.

FIRING PIN.—A rod or plunger in a gun, mine, bomb, shell, or the like that strikes and detonates a sensitive explosive to fire the main explosive or propelling charge.

FIRING POINT.—A firing station on a firing line.

FIRM GRIP.—A commercial rosin-like paste, used to prevent slippage when handling weapons, or any combination thereof.

FLASH HOLE.—A hole in the head of the cartridge case through which the primer flash ignites the propellant.

FLAT BASE.—Type of base used on a bullet.

FLAT HOUSING.—The .45 Automatic Pistol mainspring housing, with the rear portion straight or flat where it contacts the palm of the hand.

FLINCH.—A spasmodic, physical reaction (caused by the anticipated explosive sound or recoil of a weapon) which causes inaccuracy in shooting.

FLOOR PLATE.—The base or bottom of a magazine, either detachable or nondetachable type.

FLUX.—A substance or mixture used to facilitate the amalgamation of metals or minerals when melting them, glass, borax, etc., are fluxes.

FOLDED.—A cartridge in which the base of the case is folded to form the primer pocket.

FOLLOWER.—That part of the magazine on which the cartridge's rest for feeding.

FOLLOWER SPRING.—A spring that transmits its energy for function to the follower.

FOLLOW THROUGH.—When all the elements of firing a shot are maintained until the shot strikes the target, such as position, sighting, squeezing, breathing, etc.

FOREARM.—That portion of the stock lying under the barrel in front of the action, also called the fore-end.

FOREND.—(See Forearm.)

FORESTRAP.—Front of a revolver or pistol grip.

FOULING.—The accumulation of a deposit within the bore of a firearm caused by solid products remaining after a cartridge has been fired.

FOULING SHOTS.—Shots fired for the purpose of warming the bore so that following rounds will be better stabilized.

FRAME.—A receiver.

FRANGIBLE BULLET.—A brittle plastic or other nonmetallic bullet for firing practice which, upon striking a target, breaks into powder or small fragments without penetrating. NOTE: Frangible bullets are usually designed to leave a mark at the point of impact.

FREE BORE.—A type of barrel rifling where lands have either been completely eliminated, or reduced, in front of the chamber, purpose being to reduce chamber pressure.

FREE FIRE.—A term used in international type competition denoting rifles whose only restrictions are: (a) The weight must not exceed 8 kilograms and the caliber must not exceed 8 millimeters. (b) The rifle must have been examined and passed as safe by the controller of arms. (c) Telescope sights are prohibited. Filters may be used within the scope of ISU rules. (d) The lower part of the grip for the right hand (left hand for a left handed shooter) must not be extended in a way that it may serve as a support against the sling or the left arm.

FREE PISTOL.—A term used in international type competition, denoting a pistol whose only restrictions are bore (.22 cal) grips (must not give support to anything but hand), and sights (must not be optical).

FOOT POUNDS (FT/LBS).—A measurement of energy.

FROG.—A slang term used for the metal two pronged fastening hook on leather rifle sling.

FULL METAL CASE.—A bullet completely jacketed. All service ammunition.

FULL PATCH.—(See Full Metal Case.) A slang term for full metal case.

FULMINATE OF MERCURY.—(See Mercury Fulminate.)

FUNCTION.—Operate, used in conjunction with the cycle of operation in a weapon.

GAIN TWIST.—A system of rifling in which the pitch of the lands and groovers increases from breech to muzzle in order to gradually accelerate a bullet to maximum rotational velocity as it leaves the muzzle.

GALLERY.—An indoor rifle or pistol range.

GAS CHECK BULLET.—A device (usually shaped like a cup) fitted over the base of a bullet designed to prevent the hot gases from fusing or melting the base of the bullet and to act as a gas seal.

GAS-OPERATED.—Of an automatic or semi-automatic weapon; that utilizes part of the expanding powder gases in the barrel to unlock the bolt and actuate the loading mechanism.

GAS PORT.—In gas-operated weapons, a small hole drilled into the barrel through which some of the expanding powder gases escape to furnish power for the auto-loading cycle.

GAUGE (OR GAGE).—(a) A measurement: standard measure, or scale of measurement. (b) Dimension; capacity, extent. The size of the bore of a firearm, especially of a shotgun, as determined by the number per pound of spherical projectiles fitting the bore.

GILDING METAL.—Soft metal used to jacket a small arms bullet, this metal can be readily engraved by the lands as the bullet moves down the bore.

GLASS SIGHT.—A slang term used to denote any sight that utilizes glass. Usually referred to as a telescopic sight or one that magnifies.

GRAIN.—A unit of weight, 7000 grains to 1 pound weight.

GRAPHITE.—A soft form of carbon used as a lubricant and a glaze for grains of propellant to prevent the buildup of static electricity and the attendant danger of premature explosions. Also used as a flash inhibitor.

GRAVITY FACTOR.—The rate of acceleration of a falling body towards the earth.

GROOVE.—(See Rifling.)

GROUND CLOTH OR GROUND PAD.—Cloth material laid on the ground to protect a shooter and his equipment.

GROUP.—Short for bullet group.

GUN.—A mechanism consisting essentially of a barrel, receiver and breech mechanism, using controlled explosives to shoot projectiles or signal flares.

GUNCOTTON.—A high explosive formed by the action of sulphuric and nitric acid upon cellulose. Its shattering effect or brisance is too high for it to be used as a propellant, but when used with nitroglycerine and suitable amounts of solvents, it forms the main ingredient of many modern propellants.

GUNSMITH.—A person who makes or repairs small arms.

GYROSTATIC STABILITY.—In firearms, imparting the necessary spin to a projectile around its longitudinal axis, either by rifling or fins, to enable the projectile to present its point in the direction of motion, and insuring that the projectiles point follows its trajectory.

HAMMER.—The mechanism that strikes the firing pin or percussion cap in a firearm.

HAMMER GUN.—A gun whose hammers are on the outside of the action.

HAMMERLESS.—A gun whose hammers are concealed within.

HAND GUARD.—A wood or metal cover which encloses the upper half of a rifle barrel and protects the firers hands from heat generated by firing.

HAND LOADING.—Manufacturers of ammunition by an individual using hand tools.

HAND (PISTOL).—The operating lever which turns the cylinder when the hammer is pulled back on the receiver.

HANGFIRE.—A brief delay of a round of ammunition in firing after being struck or subjected to other igniting action.

HARD BALL.—A colloquial term used to describe Government Issue ball ammunition; usually used to describe "cartridge, ball, Cal. .45".

HEAD (CARTRIDGE CASE).—Portion of cartridge case, which includes the extraction groover or rim, primer pocket and primer.

HEADSPACE.—The distance between the face of the locked bolt or breechblock of a gun and some specified point in the chamber. NOTE: With guns designed for rimless, bottle-necked cartridges, headspace is the space between the bolt face and a specified point on the shoulder of the chamber; with guns using rimmed cartridges, the space between the bolt face and the ridge or abutment in the chamber against which the rim rests; and with guns using rimless straight-case cartridges, the space between the bolt face and the ridge or point in the chamber where the mouth of the cartridge case rests.

HEAD STAND.—Markings on the head or a cartridge case that usually indicate source and date of manufacture.

HEAVY SLIDE.—Addition of weight to a slide to reduce recoil while firing.

HEEL.—(a) The upper rear corner of a rifle buttstock. The top of the butt plate. (b) Heeling is caused by a firer's tightening the large muscle in the heel of the hand to keep from jerking the trigger.

HIGH HOUSE.—The structure located on the left side of a skeet range. Name derived from the fact that the target is thrown from the upper portion of the structure.

HIGH MICRO.—(See Micro-Sights.) A commercial rear sight with a standard dovetail.

HIT.—To hold fire, to refrain from firing at a target; to hold fire, the command given. Sight pictures obtained by the shooter described as hold, i.e., 6 o'clock or center hold.

HOLD CLOSER.—A command that is given the shooter by the coach to indicate that he should raise his sight picture, as he is shooting low. Used only by the coach in Hi-Power rifle and rapid fire.

HOLLOW POINT.—A projectile with a cavity within it's point. May or may not have controlled expansion.

HOME RANGE MATCH.—(See Postal Match).

HOODED SIGHT.—A projectile circular covering placed around the front sight to prevent damage. Fixed front sight sometimes confused with globe sight which has interchangeable front sights.

HOOK.—(a) Butt extension of a rifle which fits under the arm pit of the shooter. Sometimes inverted to fit over the shoulder for prone shooting. (b) Sometimes used to describe how to grasp the rifle in the off-hand position.

HOUSING.—A covering or frame to protect integral parts of a firearm, i.e., a mainspring housing, trigger housing.

IMMEDIATE ACTION.—The action a person performs when a stoppage has occurred in a weapon to put the weapon back into operation with little or no loss of time.

IMPACT.—The striking of a projectile or bomb on the target or surface.

IMPACT AREA.—Area in which projectiles or bombs strike or are expected to strike.

IMPROVED CYLINDER.—Type of choke on a shotgun which controls shot pattern. Built into barrel containing a minimum degree of choke.

I.M.R.—Improved Military Rifle powder, a prefix designation of E. I. duPont de Nemours and Co., Inc., for their commercial rifle powder with nitrocellulose base.

INFANTRY TROPHY MATCH.—A high power rifle match using silhouette targets. Team is composed of six firing members, two coaches, using a limited amount of ammo.

INITIATOR.—A sensitive explosive that detonates to initiate the action in an explosive train. NOTE: An explosive such as lead oxide, combines the properties of sensitivity, low brisance, is commonly used as an initiator.

INSIDE LUBRICATED.—Bullet is lubricated before loading. Bullet also contains lubricant grooves that are not visible in the finished cartridge.

INTERNATIONAL SHOOTING UNION (ISU).—Organization similar to the NRA, which governs international type shooting. It is not a branch of the NRA.

INVITATIONAL.—An invitational match is a match in which participation is limited to those who have been invited to compete.

IRON SIGHTS.—A colloquial term meaning metallic sights. (See Metallic Sights.)

JACKET.—The metal covering of a bullet.

JAM.—To stick or become inoperative because of improper loading, ejection, or the like of a machine gun full-automatic, semiautomatic, or other firearm.

JERK.—The effort by the firer to fire a pistol or rifle at the precise time the sights align with the target, usually causing a bad hit on the target.

JEWEL.—A process whereby certain parts of a weapon are polished in a circular pattern, to give a high metallic luster.

KEEPER.—Part of the sling used on the rifle that prevents the sling from coming loose, may be leather rings or metal hooks.

KENTUCKY WINDAGE.—A form of sighting and aiming usually employed when a weapon has nonadjustable sights or when the firer does not have the time to make sight adjustments.

KEYHOLING.—Tumbling of bullet in flight caused by failure of the bullet to receive sufficient spin from the rifling in the barrel.

KICK.—Used to describe the recoil of a firearm at the moment of firing.

KINETIC ENERGY.—That energy exerted by, or inherent in, a moving particle or particles, or in a moving body, by virtue of its motion; more technically, the capacity of a moving particle or body for performing work, owing to its motion, being quantitatively one-half the mass times the velocity squared.

KNEELING PAD.—Most frequently referred to as kneeling roll. A cylinderical pad approximately 8 inches long and 4 to 6 inches in diameter that is placed under the ankle or shin bone of the leg while in the high kneeling positions. More frequently referred to as a kneeling roll. May be used according to NRA Rule 5.10, and if so, size is cylindrical, approximately 8 inches long and 4 to 6 inches in diameter. Different rules apply for ISU. It is called a cushion. Size is 12 to 13 cms (4.72" to 5.12") or 16 to 18 cms (6.30" to 7.09"), both 20 cms (7.88") in length.

KNEELING POSITIONS.—A position that is assumed by the shooter (pistol or rifle) where the weight of the body is supported on one knee and the opposite foot. No other part of the body touching the ground.

KNOWN DISTANCE FIRING.—The purpose of this type of firing is to give the shooter the opportunity to apply all the principles of marksmanship. He learns to zero his weapon for all usable ranges and to make practical application of sight adjustments.

KNURL.—To checker or roughen a metal surface to afford a better grip. It is used on pistol grips, windage screws, elevation screws, etc.

LAMINATED STOCK.—The glueing of thin strips or sheets of wood together in order to produce a gunstock that will retard warpage and give added strength, usually used on target and bench rest stocks.

LAND.—(See Rifling.) One of the raised ridges in the bore of a rifled gun barrel.

LAP.—A plug usually made of lead, iron or copper, when charged with abrasive, is used for fine grinding or polishing.

LATE SHOT.—A shot is fired a moment after the time limit has expired; i.e., a shot is fired as the target is turning.

LEAD.—(a) The action of aiming ahead of a moving target with a gun, bomb, rocket, or torpedo, so as to hit the target, including whatever action is necessary to correct for deflection. (b) the lead angle. (c) The distance between the moving target and the point at which the gun or missile is aimed.

LEADED BARREL.—Excessive lead deposit in groove of barrel.

LEADED EDGE.—The marks left on the target by the bullet as it passes through the target.

LEAF SIGHT.—Rear sight for small arms, hinged so that it can be raised for aiming or lowered to keep from being broken when not in use. A leaf sight contains a peep sight that can be moved up and down to make adjustments for range.

LEG.—A slang term for Excellence-in-Competition Badge.

LEG MATCH.—A slang term for a NBPRP approved match in which Excellence-in-Competition Badges may be worn.

LEG MEDAL.—See Excellence-in-Competition Badge.

LENGTH OF PULL.—The distance from the center of trigger to the center of butt. Standard length of pull is approximately 13 1/2 for rifles. NOTE: Center of butt measured midway from heel to toe.

LEVER.—The moving handle, the working of which locks or unlocks the action in guns or double rifles. There are several forms, such as top-lever, side-lever, under-lever, etc.

LEVER ACTION.—A rifle whose action is operated by a lever under the stock. The lever usually serves as a trigger guard as well as an actuating device.

LIFE MASTER.—An individual in a master class may, upon application to the NRA, be certified as a lifetime master and will be issued a special card so indicating. A competitor may be a lifetime master for one type of competition and in a lower class for other types. The election herein provided for, once made, shall be irrevocable.

LINE OF BORE.—The extended bore axis of a gun.

LINE OF SIGHT.—The straight line between an observers eye and a target or other observed object or spot, along which sight is taken; specifically, the straight line between eye and target in gunnery, bombing, or rocket firing.

LOAD.—(a) To place ammunition in a gun. (b) A particular combination of components that comprise a loaded cartridge.

LOADING.—Device designed to limit a specified number of rounds, i.e., plug in shotgun is a form of a loading block.

LOADING GATE.—Swing away portion of a revolver which permits loading and unloading from the cylinder. This is normally found on single action revolvers.

LOCKING LUGS.—Extension on a locking mechanism that locks the breech. Metal protuberances which form an integral part of a breech block and fits into a corresponding set of slots when the breech is closed, locking the gun for firing.

LONG ROUND.—A term used to denote a round of ammunition that is out of alignment in a clip or magazine and when inserted into the weapon will cause it to jam.

LONG TRIGGER.—Type of trigger found in the 1911 model .45 Cal. Pistol. Standard Government Issue.

LOW HOUSE.—A house from which clay birds are thrown in skeet low to ground. Located on right side on range.

LOW MICRO.—A commercial rear sight with a wide dove-tail base, the slide or receiver must be milled to accept this sight.

LUBRICATE.—A substance used to reduce friction, i.e., oil, grease, wax, etc.

LUBRICATION GROOVE.—Groover or grooves on a bullet that are filled with a lubricant. See also Inside Lubricated.

MACHINE REST.—A device used to secure a weapon in place to check functioning, accuracy and ammunition.

MAGAZINE.—(a) A structure or compartment for storing ammunition or explosives. (b) That part of a gun or firearm that holds ammunition ready for chambering. NOTE: In sense (b), magazines for small arms may be detachable or nondetachable from the rest of the piece. A box magazine is a detachable magazine in the shape of a rectangular box. See also Clip.

MAGGIE'S DRAWERS.—A slang term for the red flag that is used to signal a miss in high power rifle shooting.

MAGNAGLO.—Used for same purpose as magnaflux, slightly different process. Use of blacklight and special dye.

MAGNAFLUX.—A process used for detecting invisible minute cracks and flaws in in ferrous metal. Use of powdered metal.

MAGNUM.—A term used to denote a weapon of more than normal power.

MAINSPRING.-That part of a weapon which furnishes energy to the hammer or striker.

MAKE THE LINE SAFE.—Command given to cause shooters to make weapons safe and to ground them and to step back away from the firing line.

MALFUNCTION.—The improper operation of any part of a weapon that may or may not stop it from firing.

MARK.—A command used in high power rifle shooting to cause target operators to pull target, insert spotting disk, and raise and indicate score with disk.

MARKING DISK.—When targets are scored from pits, a colored disk on a rod is used to signal the value of the shots. (See Scoring.)

MARKSMAN.—See Classification.

MARKSMANSHIP.—Skill in hitting the mark with any small arms. Also, anything pertaining to small arms including training and competition in the use of small arms.

MASTER.—See Classification and Life Master.

MATCH.—A competition consisting of one or more states. It may, in the case of aggregate matches, include the score fired in several subsidiary matches.

MATCH CONDITIONED WEAPON. — Any small arms which has been made to shoot more accurately than issued or made specifically for the use in competition.

MATCH GRADE.—Special weapons, ammunition or equipment manufactured for competitive match purposes.

MATCH GRADE AMMUNITION.—Ammunition made specifically for use in competition shooting.

MATCH PISTOL.—A pistol manufactured or modified to special tolerances for competitive shooting.

MATCH RIFLE.—A rifle manufactured or modified to special tolerances for competitive match use.

MAXIMUM EFFECTIVE RANGE.—The greatest distance, the average shooter may be expected to inflict casualties or damage.

MAXIMUM ORDINATE.—Highest point of trajectory above the line of sight.

MAXIMUM RANGE.—A capability of an aircraft, gun, radar transmitter, or the like that expresses the most distance point to which the aircraft can fly, the gun can shoot, etc.

MECHANICAL TRAINING.—Training conducted for purpose of teaching disassembly and assembly of weapons, cleaning and functioning.

MEDAL.—(a) A piece of metal struck or cast as the symbol of an award to a person. (b) The award represented by this piece of metal.

MELTING POT.—Container used in the process of melting metal components for bullet casting.

MERCURIC PRIMER.—A primer containing a chemical compound of fulminate of mercury. This compound causes severe deterioration of brass case.

MERCURY FULMINATE.—An explosive extremely sensitive to shock, spark, or friction, used to set off other explosives.

METALLIC SIGHTS.—Any sight not containing a lens or system of lenses; except a single lens may be attached to the rear sight as a substitute or addition to prescribed spectacles. (NRA 3.7, Rifle.) Any sight (including tube sights) not containing a lens or system of lenses; except a single lens may be attached to the rear sight as a substitute or addition to prescribed spectacles. A colored filter type lens may be attached to either front or rear sight.

MICRO SIGHTS.—A commercial rear sight, adjustable for windage and elevation that can be used on most all pistols.

MICROMETER SIGHTS. — Normally referred to a rear sight which has 1/4 minute or less graduations. The rear sight of a weapon, employing a system of precise adjustment, so exact corrections may be applied to the path of the bullet, as determined by aim. Calibration for correction is minute of angle. Graduations or movement of the sight adjustment are usually 1/8, 1/4, or 1/2 minute angles. The same system of adjustment is applied to precision rifle telescopes.

MID-RANGE.—The point half-way between the firing line and the target.

MIL.—A unit of angular measurement used in gunnery and in the launching of bombs and guided missiles. NOTE: A true mil is the angle determined by an arc the length of which is 1/1000 of the radius. But for practical purposes, the mil is considered to be 1/6400 (instead of 1/6283) or 360, which represents a linear measurement of approximately 1/100 of the radius for any given circle. Thus, movement of a 1,000-foot radius by 1 mil will cause a movement of 1 foot, or approximately 1 foot, on the circumference.

MINUTE OF ANGLE.—The sixtieth part of a degree which amounts to about one inch per 100 yards of distance.

MIRAGE.—An optical phenomenon produced by a stratum of hot air of varying density across which the observer sees reflections. When using a telescope on the firing line and looking toward the targets on a bright sunlit day, you can see the mirage as wavering heat waves.

MISFIRE.—A momentary or permanent failure of a round of ammunition to fire after igniting action is taken; an instance of such failure.

MISS.—An instance of failing to hit a target with a missile, as in "he had two misses, one hit."

MONOCULAR VISION.—Viewing with only one eye. When one eye is closed in taking sight with a gun, it is a case of monocular vision.

MONT CARLO.—A form of butt stock in which the comb is carried back horizontally almost to the butt, when it descends abruptly to the heel portion.

MORE WHITE.—Coaches command to a shooter to change his aiming point slightly lower.

MOULD, BULLET.—An implement for moulding bullets.

MOUNTS.—Device used for the placement of sights on weapons.

MOUTH.—In old days the muzzle end of the barrel was called the mouth. Today we refer to it as muzzle. NOTE: The open end of a cartridge case is also called the "mouth."

MUSHROOM.—Expansion of a projectile.

MUZZLE BLAST.—Sudden air pressure exerted at the muzzle of a weapon by the rush of hot gases and air on firing.

MUZZLE BRAKE.—Device attached to the muzzle of the gun barrel which utilizes escaping gases to reduce the effective recoil force of the barrel assembly on the carriage or mount. It also reduces muzzle blast and muzzle flash.

MUZZLE VELOCITY.—The speed of a bullet or shell, relative to the gun, at the instant it leaves the muzzle.

NATIONAL BOARD FOR THE PROMOTION OF RIFLE PRACTICE (NBPRP).—The governing board in matters pertaining to Nationwide civilian marksmanship training.

NATIONAL MATCH COURSE.—(See Landing Party Manual, 1960.)

NATIONAL MATCHES.—Competitive small arms matches held annually under the auspices of the NRA, the NBPRP, and the U. S. Army.

NATIONAL RIFLE ASSOCIATION (NRA).—The NRA is a non-profit organization supported by the membership fees of over 1 million individual members. Founded in 1871, it has grown in size and stature for 87 years. Today, it is recognized for its outstanding patriotic and public service contribution to the American way of life. It is the largest organization in the U. S. that deals with guns, gunning, and all associated materials and subjects.

NATIONAL TROPHY MATCH.—Those competitions at the National Matches for which trophies and medals are provided for by appropriate funds.

NATO CALIBER.—Cartridge designed to be used in weapons of the NATO Nations, 7.62 Cal. Identical with Cal. .308 Winchester.

NATURAL POINT OF AIM.—The correct position of the body in relationship to the target.

NECK.—That portion of a cartridge used to retain the rear portion of a bullet.

NECK REAMER.—A tool used to slightly enlarge the neck of a cartridge case that has been fired.

NECK SIZE.—The inside diameter of a cartridge neck.

NECK TRIM.—An operation in reloading used to shorten a cartridge case to a specified length.

NEUTRAL POWDER.—A propellant, usually a single perforated cylindrical grain whose burning area remains constant.

NITROCELLULOSE.—See Cellulose Nitrate. Nitric acid mixed with cotton forming what is called gun cotton used in powder.

NITROGLYCERINE.—Nitric acid mixed with glycerine used in double based powder.

NOMENCLATURE.—A set of systems of names or symbols given to items of supply and equipment, to organizations, or to other variously identifiable things as a means of classification and identification.

NONCORROSIVE.—A term applied to primers containing no potassium sulphate.

NOSE.—(a) That portion of the hammer in the K-38 Revolver which strikes the primer of a cartridge. (b) That are of a bullet from the widest part to the point.

NOT READY.—The response given by a shooter to the Range Officer in the event he is not prepared to fire when asked by the Range Officer.

NRA MATCH PISTOL.—See Match Pistol.

OBJECTIVE LENS.—The lens at the front of the telescope which forms the "primary image" of the object viewed.

OBTURATION.—The sealing of a chamber in a gun or fuse to prevent the escape of gas in a particular direction.

OCULAR LENS.—The eyepiece of an optical instrument.

OFFHAND.—An individual, scoring device, target, equipment, or material recognized and approved by the NBPRP, NRA, and ISU, or other appropriate organization in the condition of a shooting competitor.

OFFICIAL BULLETIN.—A bulletin issued by the statistical office after all competitors have been given an opportunity to call attention to errors shown on the preliminary bulletin. All prizes and medals are issued on the basis of the official bulletin which becomes the official record of the match.

OFFICIAL REFEREE.—The official appointed by the jurisdictional organization conducting the competition, to act as referee and fulfilling all duties and obligations expected of such.

OFFSET (CAST OFF).—Butt end of gunstock set over to the right usually 1/4" to 3/4" from center of bore line. NOTE: Cast on would be the same except set over to the left.

OGIVE (PRONOUNCED 'OH JIVE').—The curved or tapered front of a projectile. NOTE: With a bullet, shell, or bobb, other projectile having a fuze forming the nose, the ogive is included between a point where the projectile begins to curve or taper and a point on the line where fuze and body meet; in other types of projectiles, the nose of the projectile is included as a part of the ogive. (See False Ogive.)

OPEN MATCH.—A match open to anyone. An open match may be limited to citizens of the United States or to members of the NRA of America. Such limitations must be stated in the program.

OPEN SIGHT.—A rear gunsight having a notch. NOTE: Distinguished especially from a peep sight.

ORDINATE.—A measurement made from the line of sight to the line of trajectory of the bullet at any point.

ORDNANCE.—(a) Military weapons, ammunition, explosives, combat vehicles, and battle material collectively, together with the necessary maintenance tools and equipment. (b) An organization or activity that stores, issues, or maintains such material.

ORIFICE.—A small hole in a weapon, i.e., gas port.

OUTSIDE LUBRICATED.—Lubrication of a bullet's exterior.

OVER AND UNDER.—A gun or rifle in which the barrels are placed vertically, one over the other.

OVERBORE.—Usually referred to as a cartridge case with a greater powder capability than is considered adequate for the size of the bore. NOTE: Most Wildcat Magnums are usually considered overbore capacity. When a cartridge is in this condition the load is very critical.

PADDLE.—A shot stick with a disk at one end, painted white on one side and red on the other. Used to indicate when the firing line is ready, safe, clear, etc.

PAIR FIRE.—When 2 persons are firing on the same point usually alternating the shots in a prescribed sequence.

PALM REST.—An extension or attachment below the rifle forearm which aids the normal hand grip.

PARADOX.—The term used to describe a barrel partially rifled at the muzzle.

PARALLAX.—An apparent movement or displacement of objects in the field of view with respect to the reticle. In a telescopic sight, parallax occurs only when in the optical system of the scope, the primary image of the object falls behind or in front of the reticle—and when the eye moves off of the optical axis of the scope.

PARAPET.—An earthern mound protecting ranges.

PARKERIZE.—To impact a dull, relatively rough finish to a firearm by use of powdered iron and phospheric acid. Hence Parkerization, Parkerized.

PASTERS.—Small gummed pieces of paper used to patch bullet holes on the target.

PATH.—Flight of bullet; a walk way to targets.

PATTERN.—Usually referred to in the gunsmithing field commonly called "checkering pattern." This pattern conforms with the stock configuration and incorporates border and all master lines.

PEENING.—To draw, bend, or flatten by hammering with peen.

PEEP SIGHT.—A rear gunsight having a small hole in which the front sight is centered in aiming. Distinguished from an open sight.

PELLET.—(a) One of a group of projectiles in shotgun shells. (b) A projectile fired from various guns that do not use gunpowder as the propellent force.

PENETRATE.—To force a way into a target or other substance.

PILOT SHOT.—During alternate high power rifle team firing, the first shot fired by which corrections may be established for wind and range conditions.

PISTOL.—(a) In popular usage, a firearm, usually short barreled, designed to be held and fired in one hand. (b) More precisely, such a firearm in which the chamber is an integral part of the barrel, especially a self-loading pistol, as distinguished from a revolver. (c) A machine pistol—usually a short barreled weapon, firing pistol ammunition, and which fires full automatic.

PISTOL GRIP.—A gunstock the grip of which turns down, as does a pistol.

PIT.—(a) Individual fire trench; small hole to afford shelter from fire. (b) Shelter for personnel operating the targets at an open air target range. (c) Sunken emplacement for artillery.

PITCH.—The angle which the butt of a firearm takes in relation to the line of sight.

PLUNGERS.—(a) Any cylindrical part that operates with a plunging action, such as a piston. (b) The firing pins which are struck by the hammers in shotguns and double rifles, called strikers in bolt-action rifles.

POINT.—Firing stand; nose of bullet; to point at object or target.

POSITION.—A prescribed physical method of holding a weapon.

POST.—Refers to post sight, a vertical front sight, hence the term post. It may be metallic, open or hooded, or may be incorporated in several manners and shapes, within telescopic sights.

POST ENTRY.—An entry made after the regular entry closing time. Because of the extra work placed on the statistical office as a result of late entries an addtional fee is charged (the "post entry fee"). Sometimes no post entries are accepted. "Post Entries" have no connection with "Postal Matches."

POSTAL MATCH.—A match in which competitors fire on their home ranges using targets which have been marked for proper identification. Fired targets and scores are then exchanged by mail.

POTASSIUM NITRATE.—A corrosive salt found in Black Powder composition, commonly called saltpeter.

POWDER.—A slang for gun powder; any substance in the form of balls, cords, strips, flakes or bare that can be used as a propellent in a cartridge. A dry explosive or propellent, often in the form of one or more large pieces.

POWDER MEASURE.—Various mechanical means by which weight or volume of powder may be measured.

POWDER SCALE.—A device used to measure powder by weight.

POWER (SCOPE).—Number of times an object is magnified by use of a telescope. Example: 20 times its size or 20X, etc. The degree to which a lens magnifies the number of times it multiplies the apparent diameter of an object.

PRELIMINARY BULLETIN.—A bulletin issued by the statistical office immediately after a match has been fired showing scores of competitors as computed in the statistical office. Competitors check with statistical office on any apparent inaccuracies as shown by this bulletin.

PREPARATION PERIOD.—A specified period of time allotted in competition which enables the shooter to prepare for firing. Usually a period of 3 minutes.

PRESSURE.—Force extended against an opposing body.

PRESSURE CURVE.—(a) The arc of the projectile in the LaBoulenge Chronograph test to determine velocity. (b) The graphic curve of pressures in pounds per sq. inch, resulting from various powder burning rates.

PRESSURE PEAK.—The greatest amount of pounds per sq. inch, pressure created within the chamber.

PRIMER.—A sensitive explosive device that responds to percussion, friction, electric impulse, or some other disturbance to set off a propellent or an explosive; an initiator.

PRIMER CUP.—A small cup holding a primer mixture and other components, used in small-arms cartridges and certain other ammunition.

PRIMER POCKET.—A recess formed in the head of a cartridge case to hold the primer.

PRIMER SALT.—A residue of potassium chlorate which is deposited in the bore through the use of corrosive primers.

PRIMER SETBACK.—The backward movement of a primer cup in a cartridge or shell case upon explosion of the propellent, as occurs when the base of the cup is not properly supported by the bolt face or breech block.

PRIMER VENT.—Normally called the flash hole located in the head of the cartridge case between the primer seat and propellent in the case to allow the primer flame to ignite the powder.

PROGRESSIVE BURNING.—A characteristic of most rifle powders whose burning increases as the volume increases to maintain an increase in pressure on the base of the projectile.

PROJECTILE.—(a) An object, especially a missile, projected by an applied exterior force and continuing in motion by virtue of its own inertia, as a bullet, bomb, shell, or grenade. (b) Also applied to rockets, especially rocket missiles and guided missiles.

PROOF.—A standard set by gun manufacturers to insure a weapon will withstand a safe pressure for its given caliber.

PROOF MARK.—A stamp used by gun manufacturers to identify all weapons having met the standard prescribed pressure test it considered safe. Proof marks are usually found on the barrel and/or under the receiver or both, depending upon its manufacturer.

PROOF TEST.—A rifle which has successfully withstood a proof test load without showing signs of metal fatigue. NOTE: Proof test loads are nearly always approximately 20,000 PSI above standard ammunition.

PROPELLENT.—That which provides the energy for propelling a bullet, shell, or the like; also a fuel, either powder or liquid, for propelling a rocket or the like.

PROTEST.—A formal objection to methods or procedures of operation, equipment, scoring, or score, at a shooting competition made by a competitor.

(PSI) POUNDS PER SQ. INCH.—A unit of measure used to evaluate the pressure in a chamber or cylinder.

PYROCELLULOSE.—A variety of pyroxylin, used in making smokeless powders and gelatin dynamites.

QUALIFICATION.—Describes an individual who has fired a score of marksman or higher over a qualifying course in record firing.

QUITTING SIGHTS.–In sighting, the physical and/or mental interruption of concentration. Most frequently caused by letting the eye leave its focus on the front sight and glancing at target.

RAIL.—A strip of metal usually 12" to 18" long with a slot the length of the rail to attach forearm stop and palm rest adapter for the international rifle. It also is used as a foundation to countersink all the guard screws for securing rifle and stock together. In some instances set triggers are inletted into the rail so they can easily be removed without the removal of barrel and action.

RAIL MOUNTS. — In international rifle building the adaptors used to secure, i.e., palmrest to rifle rail are called rail mounts. NOTE: Metallic and scope sight which are secured on a long metal base to permit forward and rearward movement are sometimes called rail mounts. A more common name is dove-tail mounts.

RAMP.—An inclined plane designed to give proper elevation of front or rear sights.

RANGE.—A prescribed area where weapons firing is conducted; includes firing line, butts, target frames, pits and impact area.

RANGE FLAG.—A red flag used to indicate whether or not firing is being conducted on the range. Firing is in progress when flag is raised to its highest position on the flag pole.

RANGE OFFICER. — The individual in charge of all firing on any given range.

RAPID FIRE.—(a) Service Rifle: fired at 200 yds-10 shots, 50 seconds, and at 300 yds-10 shots, 60 seconds. With manually operated rifle (bolt-action) and 10 seconds for each range. (b) In pistol there are three different rapid fire courses: (1) NRA-5 shots in 10 seconds, Standard American Target. (2) AFQC-6 shots in 15 seconds, and 6 shots in 30 seconds, from various positions at Military E Target. (3) International Rapid fire consists of firing 5 shots at 5 silhouette targets in 8, 6, and 4 seconds.

RATTLE BATTLE.—The slang term used in describing the Infantry Trophy Rifle Team Match.

READY COMMANDS. — These commands are, "Is the Line Ready? The line is Ready. Ready on the Right, Ready on the Left, and Ready on the Firing Line." Commands used to ascertain if personnel are ready to commence firing.

READY LINE.—The area just to the rear of the firing line, where competitors who are to fire on the next relay must wait their turn.

REAMER.—A tool used to enlarge a hole such as the primer pocket of a cartridge.

RECEIVER.—The basic unit of a firearm, especially a small arm, to which the barrel and other components are attached.

RECEIVER BRIDGE.—A web or connector used to span the recess of a receiver to increase its strength. Also, in some weapons, used in conjunction with the firing pin tang, to prevent weapon from firing until breech is completely locked.

RECEIVER SIGHT.—Rear sight mounted on the receiver of the weapon.

RECOIL.—The backward movement of a gun or part thereof on firing, caused by the backward pressure of the propellent gases; the distance that a gun or part travels in this backward movement.

RECOIL ENERGY.—The force in foot-pounds exerted rearward by a firearm when fired.

RECOIL LUG.—A metal surface, normally located in the forward part of the action which transmits the recoil of the barrel and receiver group to the stock.

RECOIL PAD.—A cushion attached to the butt of a shotgun or rifle to absorb recoil.

RECORD FIRING.—The act of firing a qualification course for a score to be placed in an individual's file.

RE-DISK.—To have the value of the shooter's last shot or shots re-indicated.

REDUCED TARGET. — A standard target that is reduced in size proportionally, to be fired at a shorter range. A standard target where the scoring rings have been reduced in size proportionally to the distance at which the target will be fired from.

RE-ENTRY.—A match in which the competitor is permitted to fire more than one score for the record; one or more of the highest scores being considered to determine the relative rank of competitors. Then number of scores which may be fired, and the number of high scores to be considered in deciding the relative rank of competitors must be specified in the program.

RE-FACE.—To put a new target face on backing material.

REFEREE.—A person to whom anything is referred for decision. In sports, a judge of a game, an umpire. In competitive shooting, depending upon the organization exercising jurisdictional control, duties and powers of enforcement of a referee are varied. Basically, he enforces the rules of a match.

RE-FIRE.—The firing of a string or stage of fire over again after it has once been fired.

REGIONAL MATCHES.—A registered match sponsored by the NRA for a specific region or area in which a NBPRP Excellence-in-Competition Match may be included.

REGISTERED MATCH.—Any match registered with the NRA. A registered match is the only match where a national record may be set.

RELAY.—The term used to describe separate groups of shooters for identification purposes and to insure efficient supervision of a match. Relays are usually based on the number of targets available. Example: 50 targets and 100 competitors would require 2 relays. Shooters must know their relay number to avoid confusion when competitors are called to the firing line.

RELOADING DIES.—Tools used in reloading ammunition, such as seizing and decapping die, seating and crimping die, etc.

RELOADING TOOL.—A machine or device used in the hand loading of ammunition.

REPEATING.—Usually referring to a self-loading type weapon automatic or semiautomatic. May also be used in reference to slide or lever action weapons.

RESIZING.—A process whereby a cartridge case is swaged to a desired size or shape.

REST.—A support for a gun while firing. May mean the firearm is held physically by the shooter utilizing additional means of support such as sandbags, trees, rocks, logs, or bench rest. Weapon may be held by mechanical means such as a machine rest. In competitive shooting, various organizations have established rules governing what constitutes artifical or additional support.

RETICLE.—A system of lines, wires, or the like, in the focus of the eyepiece of an optical instrument. Also called a reticule. One of the fine wires or threads mounted as a reticle in the focus of the eyepiece of optical instruments, and used to define the line of sight with accuracy.

REVOLVER.—A handgun having a rotating cylinder carrying several rounds of ammunition, each round being in a chamber that comes into line with the barrel before the round is fired.

RIB.—A liner piece of metal attached to the uppermost part of the slide or barrel. Used to raise the sighting plane, improve the appearance of the weapon, and to reduce barrel vibration.

RICHOCHET.—Of a bomb, bullet, or the like. To skip, bounce or fly off at an angle after striking an object or surface.

RIFLE (MATCH GRADE).—Commercial or ordnance type weapons designed for or modified to competition specifications.

RIFLED SLUG.—A projectile used in shotgun ammunition with spiralled grooves, the theory being that the air forced through the grooves, while the projectile is in flight tends to spin the slug to effect stability.

RIFLING.—(a) See also Lands and Groove. The action of cutting spiral longitudinal grooves in the bore of a gun barrel. (b) The spiral grooves cut in the bore of the barrels of certain types of firearms and cannon.

RIM.—The outer or extreme circumference on the head of a cartridge used for head spacing in some cases and for extraction also.

RIMFIRE.—A cartridge in which the priming mixture is placed in the fold of the head of the shell, as in Cal. 22 rimfire cartridges.

RIMLESS.—A cartridge case design in which the case bears no rim about the head. The extractor in this case will fit into an extractor groove about the head of the case.

RIMMED CARTRIDGE.—A cartridge whose rim extends beyond the cartridge case to control headspace and facilitate extraction.

RUPTURED CARTRIDGE.—A cartridge case that is deformed with partial or complete circumferential separation around the body.

SAFETY.—A mechanical continuance on a weapon to keep it from accidently discharging a cartridge.

SAFETY FAN.—The 35° area to the left and right of the line of fire on that which is considered the danger zone.

SAMI.—A Navy Small Arms Marksmanship Instructor with a Navy Enlisted Classification of GM-0811.

SATU.—The Small Arms Training Unit located at San Diego, California.

Scaled Round.—A round of ammo which has been placed in chamber of a hot weapon and heated, or a round heated from the sun.

SCATTER GUN.—A slang term for shotgun.

SCHNABEL.—The tip of the forearm when it is made in pointed or ornamental form—named from the German word for a "bird beak."

SCHUETZEN.—Type of hook used in position shooting.

SCOPE.—Short for telescope.

SCOPE MOUNTS.—That portion of a telescope that attaches the telescope to another object, normally the scope bases.

SCORE.—The total value of all the required shots fired by a competitor in any one match or course of fire.

SCORE BOARD.—Device used for posting of match scores for information of competitors and interested individuals.

SCORE BOOK.—A book used to maintain a chronological record of shooting.

SCORE CARD.—A printed form on which shots fired are recorded.

SCORER.—Anyone appointed or designated by duly authorized match officials to record scores fired.

SCORING.—The act of keeping a score.

SCORING PLUG.—In scoring, a device used to determine whether more than one bullet has penetrated a single hole, or to determine the correct value of a shot on the target.

SEAR.—That part of the lockwork of a firearm that engages the hammer or striker to hold it in a cocked position.

SEAR NOSE.—A portion of the sear which engages into the sear notch of the hammer or striker of a weapon.

SEAR NOTCH.—A place on the hammer or striker in which the sear engages to hold striker or hammer to the rear.

SEASON CRACKING.—Usually refers to a small split in the cartridge brass case which occurs when brass is old and the grain structure of the brass is relaxed. Also refers to small cracks that appear in gunstocks due to moisture content changes.

SECTIONAL DENSITY.—The weight of bullet in grains, divided by its diameter.

SEMIAUTOMATIC.—Of a firearm or gun; utilizing part of the force of an exploding cartridge to extract the empty case and chamber the next round, but requiring a separate pull on the trigger to fire each round.

SEMI-RIMMED.—A cartridge case design in which the case head bears both a rim and a hollow groove for the extractor.

SERRATED TRIGGER.—Trigger with face knurled, stippled or a series of small grooves to prevent loss of finger placement.

SERVICE.—See Rifle-Service.

SERVICE AMMUNITION.—Ammunition manufactured for the purpose of firing in combat, or to simulate combat.

SET TRIGGER.—A device for lightening the trigger pull at will, in order to remove the disturbing effect of a heavy pull in target shooting. Usually two triggers are used, the rear trigger sets the sear, while a light touch on the front trigger will discharge the arm.

SHARPSHOOTER.—See Classification.

SHELL.—A slang term for cartridge ease.

SHELL HOLDER.—Tool used in rifle cartridge reloading for purpose of facilitating ease of maintaining cartridge case within loading press.

SHIM UP.—A liner or thin piece of material used for placing between surfaces to secure proper adjustments (i.e., sight base to receivers, etc.).

SHOOT-EM-OFF.—A command used by a rifle team coach during rapid fire when the shooter is about to run out of time.

SHOOTING BOX.—Container used to carry shooting equipment.

SHOOTING GLOVE.—A special glove used by rifle shooters to protect the hand that is placed between the fore-end and the sling.

SHOOTING UNIFORM.—Any distinctive garb worn by shooting teams.

SHOT.—(a) Terminology applied to a fired round. (b) A component used in the manufacture of shot shells.

SHOTGUN.—A smooth bore gun, used for firing a charge of small shot at short range, as in hunting small game.

SHOTSHELL.—Cartridge commonly used with shotguns.

SHOT STRING.—A term used in shotgun shooting. The elongation of the shot pattern.

SHORT TRIGGER.—Usually refers to the standard M1911A1 45 automatic pistol trigger or the standard length commercial trigger.

SHOULDER HUNCH.—Similar to flinch. A reaction of the shoulder jacket to protect the shoulder.

SIDE BY SIDE.—A weapon with two barrels placed next to each other.

SIDE LOCK.—Hammer offset to side of breech.

SIDE MOUNT.—A metal fixture with rings used to secure a telescope sight to the side of a rifle barrel and/or receiver.

SIGHT.—A device through which the target is viewed to give proper elevation and direction.

SIGHT ALIGNMENT.—When the front and rear sights are brought into correct adjustment with the eye.

SIGHT PICTURE.—Upon achieving proper sight alignment a sight picture is obtained by placing the target or bull's-eye into view.

SIGHT RADIUS.—The distance from the front to the rear sight.

SIGHTING SHOTS.—Shots fired at a target provided for that purpose and used to obtain desired information relative to adjustment of sights for the match which immediately follows.

SILENCER.—A device fixed to muzzle, baffle propelling gases, silencing sound waves.

SINGLE ACTION.—(a) A firearm whose hammer must be cocked by hand before the weapon can be fired. (b) Type of fire, made possibly by cocking the hammer, with a double-action revolver.

SINGLE BASE POWDER.—A type of smokeless powder, made of nitro-cellulose primarily.

SINGLE SHOT.—A weapon that is capable of loading with one round (non-repeating firearm).

SINGLE TRIGGER.—Common type trigger, as opposed to double, set type.

SITTING POSITION.—One of the positions used in NRA rifle competition. Weight of the body supported on buttocks and feet or ankles, no other portion of the body touching the ground. The rifle will be supported by both hands and one shoulder only. The left hand (or in the case of a left-handed shooter, the right hand) must not rest on leg or knee. The elbow will rest approximately on or just inside the knee. The legs may be apart or crossed at the option of the firer.

SIZING.—To shape cast bullet to desired diameter or cartridge case to specified dimensions.

SKEET.—A shotgun sport in which clay targets are thrown from a high house (12 ft. above the ground) and a low house (2 ft. above the ground). The shooter fires from eight different positions which are layed out on a semi-circle with the 8th position at the center of the diameter of the semi-circle. A round of skeet consists of 25 shots with a maximum of 25 points.

SKID SHOT.—An elongated bullet hole of any length caused by a bullet entering the target while target is turning into or out of view.

SLING.—A leather or web strap used to help support a rifle during firing.

SLOW FIRE.—Known distance firing. Usually a time allowance of one minute per shot is authorized.

SMALL OF STOCK.—A name usually applied to the "hand" of the butt stock. Commonly called pistol grip.

SMALLBORE.—Normally refers to a .22 caliber rim fire cartridge or weapons chambered for such cartridge.

SMOKELESS POWDER.—A nitrocellulose base powder, sometimes compounded with nitroglycerine.

SMOOTHBORE.—A firearm with no rifling.

SOFT POINT BULLETS.—Sometimes these are called softnosed, dum-dum, or mushroom bullets. This type of bullet has a non-fouling jacket filled with a lead or lead alloy core, closed at the base, and with the lead exposed at the nose.

SOLVENT.—(a) A liquid capable of dissolving powder residue. (b) A solution of ether and alcohol to cool the burning of smokeless powder.

SPEED LOCK.—A trigger and hammer designed for extra fast hammer fall.

SPIN.—The bullet revolving around its own axis caused by the rifling.

SPITZER.—Pointed bullet.

SPOT WELD.—In rifle shooting, the act of fitting the face to the stock or thumb so that during recoil, the face will remain in contact with the stock and/or thumb.

SPOTTER.—A round disk with a spindle through the middle used to indicate the point of impact on the target.

SPOTTING SCOPE.—A telescope used by shooters to visually check hits or spotters on targets.

SQUADDING.—The process of assigning a definite relay or target to an individual or team.

SQUEEZE.—A term used to define the independent rearward motion of the trigger finger on the trigger until a weapon fires.

SQUIB ROUND.—A round of ammunition with little or no powder charge.

STAGE.—In a match fired at more than one range, position, or class of firing, each range, position, or class of firing is referred to as a "stage" of the match.

STAKE.—One method of tightening or securing a screw or pin in a hole. Usually done with a punch of some type.

STATISTICAL OFFICER.—The chief of statistical officer is in charge of all statistical work in connection with the match except the actual recording of scores when this is done on the range. He is assisted by such assistant statistical officers as may be required.

STIPPLING.—The roughing of metal to improve the gripping surface, in lieu of checkering.

STOCK.—(a) The foundation for securing the rifle barrel and action to a useable handling piece usually made of wood and of standard measurement to fit the average person. (b) The wooden part of a firearm, especially a shoulder weapon.

STOPPAGE.—An interruption of the cycle of operation. A jam in an automatic weapon.

STOVE PIPE.—A malfunction of the weapon caused by a cartridge case being jammed (caught) in the action of the weapon and pointing upward. It appears somewhat like a stove pipe.

STREAMER.—The red cloth flag (approximately 18 ft. by 7 ft.) used as the primary range danger flag and posted at a prominent point on the range so it is visible by anyone approaching or on the range. All firing will cease at anytime this flag is hauled down.

STRIATION.—A furrow channel, small groove, or channel. A thread like line or narrow band; especially when one of a series of parallel lines.

STRIKER.—A firing pin or a projection of the hammer of a firearm, which strikes the primer in a fuze or in a round of ammunition.

STRING.—A string is a group of shots forming a part of a "stage."

SUPERPOSED.—The placement of one object on top of the other such as an Over and Under shotgun.

SUPERVISOR.—A supervisor is required at all NRA approved tournaments. The supervisor may be an NRA official referee, or an officer of an NRA Club, League or State association who is familiar with NRA competition rules and match procedure. The supervisor may also act as executive officer of an approved tournament in such combined duty as authorized by the NRA headquarters. He acts as an official referee.

SUSTAINED FIRE.—Same as rapid fire. Shooting a predetermined number of rounds in a specified time limit.

SWAGE.—A method of shaping metal through a die by pressure.

SWIVEL.—The small piece in a shotgun lock connecting the tumbler and mainspring. In revolvers, it is used to connect the spring and the hammer. The oblong loop used to connect the sling strap to the barrel and stock of a rifle is called swivel blow.

TAKE MORE WHITE.—In highpower rifle team matches, a coach's command to hold a line of white rifle team matches, a coach's command to hold a line of white between front sight and six o'clock hold on bull's-eye. This in turn will cause the shooter to lower his shot group.

TANG.—A metal strip attached to the receiver and projecting towards the butt to assist in securing the barrel to the stock. In muzzle loading arms usually forged in one piece with the breech plug.

TARGET.—The object at which the shooter aims.

TARGET BUTTS.—See Butts.

TARGET FRAME.—A frame into which the target is inserted or mounted.

TARGET OPERATION.—The manipulation of the targets.

TARGET PITS.—Area used for operation of the targets, also the protective area from which target handlers operate.

TARGET PULLER.—One who raises and lowers the target; target handler.

TARGET SPOTTERS.—See Spotters.

TEAM.—A group of shooters firing for a composite score.

TEAM CAPTAIN.—The person responsible for all duties and for the discipline of his team members.

TEAM COACH.—Deputy to the team captain. The teams shooting instructor.

TEAM SYNCHRONIZATION.—Zeroing all team weapons.

TEAM TROPHY MATCH.—See National Trophy Match.

TELEGRAPHIC MATCHES.—Matches where competitors fire on their home ranges and where scores are exchanged by telegraphic means.

TELEPHONE OPERATORS.—Used on the firing line and in the pits to relay commands.

TELESCOPIC SIGHTS.—Any sight which magnifies.

TERMINAL VELOCITY.—The constant velocity of a falling body attained when the resistance of air or other ambient fluid has become equal to the force of gravity acting upon the body.

TERSULPHIDE OF ANTIMONY.—Agent used in hardening bullet metal.

THROAD.—The tapered portion of a barrel extending from the end of the chamber to the beginning of the rifling.

TIE.—Two or more individuals or teams scoring the same amount of points.

TIE BREAKING.—Any system, or set of rules, used by various shooting organizations to determine who is the winner, when two or more individuals or teams have identical scores.

TIME FIRE.—5 Shots in 20 seconds with a pistol or revolver.

TIME LIMITS.—The periods of time given for various strings or stages of fire with any weapon.

TIP SHOT.—A slightly elongated bullet hole in target caused by a bullet that has tipped over in flight and was not rotating truly on its longitudinal axis.

TOE.—The lowest portion of the butt of a rifle or shotgun stock when weapon is in normal firing position.

TOP MOUNT.—A metal fixture with rings used to secure a telescope sight to the top of a rifle barrel and/or receiver.

TRACER.—(a) A projectile that has a chemical compound which gives a trail of light indicating the flight of the projectile. (b) The pyrotechnic composition in a bullet.

TRAINFIRE.—A new system of rifle marksmanship adapted by the U. S. Army, composed of four phases. The first phase is given to all male soldiers—upon entry in the Army and consists of Pro-mark, Field Firing, Target Detection and a Record Firing. Phase two teaches Squad Combat Firing. Phase three provides Sniper Training. Phase four consists of extreme distance firing for outstanding marksmen.

TRAJECTORY.—The curve on the vertical plane traced by a bullet, shell, bomb or other object thrown, launched or trajected by an applied exterior force, the projectile continuing in motion after separation from the force.

TRAP.—A shotgun sport in which clay targets are thrown at a fixed height within an angle of 130°. The trap house is located 16 feet from each of the five positions from which the competitor fires five shots from each, giving a maximum score of 25 points.

TRIANGULATION.—A sighting and aiming exercise.

TRIGGER.—A mechanism which, when pulled, as with the finger, releases another mechanism, as in the trigger of a gun.

TRIGGER CONTROL.—The ability to move the trigger until the sear disengages, the hammer goes forward and the weapon discharges, without any movement of the weapon.

TRIGGER CONVINCER. — A mechanical device that allows a coach to fire the weapon while it is being held and aimed by the pupil.

TRIGGER CREEP.—An undesired movement of the trigger before the sear disconnects.

TRIGGER GUARD.—A protecting part of a weapon that encircles the trigger, preventing damage or accidental firing.

TRIGGER MASH.—Slang term for trigger control-squeeze.

TRIGGER PULL.—(a) The amount of weight necessary to actuate the trigger. (b) The length of trigger travel during actuation.

TRIGGER SHOE.—A device designed for widening the trigger.

TRIGGER SQUEEZE.—See Trigger Control.

TRIGGER STOP.—Prevents excessive rearward travel of the trigger after sear/striker release.

TRIGGER WEIGHT.—The number of pounds of pressure necessary to actuate a trigger (i.e., a trigger that requires a force of 3 pounds to actuate it would be described as a 3 lb. trigger, hence the term—trigger weight).

TROPHY.—The representation of such a memorial, as on a medal; given for an outstanding achievement.

TUBE SIGHT.—Front or rear sight that is protected by a tube against the elements. Rear tube type sights usually incorporate an adjustment system for moving the sights that is similar either to a telescopic sight or micrometer rear.

TUMBLER.—The hammer, so-called of a hammerless gun.

TWIST.—The distance (in inches) a bullet travels through the barrel to make one complete revolution.

TYRO (AS PER NRA).—A competitor who has not previously fired in organized civilian, police or military pistol competitions, regardless of the courses of fire composing such matches. Any tournament sponsor may include in his program a prize schedule of award(s) for the tyro class.

UNCLASSIFIED (COMPETITIVE). — See Classification. A competitor who has not fired in NRA pistol or rifle competition during the previous three (3) years or who has not been classified as a master. Such competitor shall, unless he can qualify as a tyro, fire through his first NRA competition (or first competition following the loss of his classification) in the unclassified group, except he may, if he so chooses, be placed in the master class. A competitor in the unclassified group may compete only for place awards or awards offered in the unclassified group in individual matches. Undercut. A term that would apply to the front sight of a pistol, that has a portion cut forward to reduce glare.

UNLOAD.—To remove magazine and/or ammunition.

UNLOCK.—To put the safety in firing position.

UNQUALIFIED.—See Qualification. Not having requisite qualifications.

V-COUNT.—The total number of hits in the "V" ring. Previously used in Mil "A" and "B" targets; used now only in "C" target.

VELOCITY.—Speed, or rate of motion, in a given direction and in a given frame of reference.

VENTILATED RIB.—A strip of metal (usually steel) running the full length of a shotgun barrel with rectangular holes evenly spaced to help eliminate heat waves from the line sight and produce a flat sighting plane.

VERIFY.—To ascertain as to legality.

VERTEX.—The highest point above the weapon reached by the trajectory is called its vertex.

VISIBLE HITS.—Total number of hits on a target that are visible to the naked eye.

"V" RING.—An inner circle placed inside the bull's-eye of certain U.S. Military & NRA targets, for the purpose of ranking scores without changing the numerical value of the total score. As a hit in the bull's-eye counts 5, a hit in the smaller circle within the bull's-eye would also count 5, but for purposes of differentiation, is called Roman Numeral five ("V") which has a mathematical value of 5.

WAD.—A material used in shotgun shells to retain powder charge and control gases.

WAD CUTTER.—A term used to describe a lead bullet which cuts cleanly through the target upon impact. Cartridges containing these bullets usually have a reduced load. In Center Fire Pistol Competition, Wad Cutter is defined as ammunition other than Ball.

WEIGHING TRIGGERS.—Testing weapons to determine how much actual weight is required on the trigger to disengage the sear and allow the hammer to go forward.

WILD CAT.—An individually developed cartridge not commercially manufactured.

WINDAGE.—Moving the windage adjustment of a weapon to compensate for wide shots caused by either wind or misalignment of the sights.

WIND DOPING.—Calculating the velocity and direction of the wind by means of a telescope or other visual means.

WIND FLAG.—Flag used to indicate direction and velocity of the wind.

WIND GAUGE.—(a) Apparatus used, as in connection with target firing, to determine and sometimes record the force and direction of the wind. It comprises an anemometer and a wind vane. (b) A graduated scale on the rear sight of a small arms rifle whereby the sight may be adjusted to correct the deviation of the bullet due to a wind component perpendicular to the line of fire. The corresponding scale on sights for cannon is called a deflection scale.

X-COUNT.—See "X" Ring. The total number of X's or center shots fired.

"X" RING.—An inner circle placed inside the 10-ring or a 10-ring target, for purposes of ranking scores without numerically changing the total score. As a hit in the 10-ring counts 10, a hit in the smaller circle is still 10, but for purposes of differentiation; is called Roman Numeral ten ("X"), which has a mathematical value of 10.

ZERO.—To adjust the sight settings of a gun by calibrating results of firings.

U. S. GOVERNMENT PRINTING OFFICE : 1971 O - 429-101